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STATISTICAL ATLAS

STATISTICAL ATLAS

OF THE

BOMBAY PRESIDENCY

Third Edition

Prepared and Revised under Sec. 8 (g) of the Famine Relief Code, 1904

BY

THE DIRECTOR OF AGRICULTURE

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PREFACE TO THE FIRST EDITION

This Atlas is prepared to meet the demand made in the Famine Relief Code, Section 17, *viz.*, to prepare "a statistical account with map for each district, showing the areas therein, which are liable to famine, the causes which make them so liable, their accessibility or otherwise for relief purposes, the economic condition of the population of such areas, and a rough forecast of the maximum number of persons within each likely to require employment on relief works in a year of famine from extreme drought or other causes".

It is intended that revised editions should be prepared quinquennially or oftener. All information that can be shown in the map is so shown. The object in view is to present a statistical atlas in a more compact form than the detached accounts given in Mr. Campbell's Gazetteer—an atlas which will be a useful guide, especially in famine times, to officers sent on duty to any district with which they may not already be acquainted. It is hoped that the atlas may also be useful to others than officers of the Revenue Department. The short district accounts have been prepared partly from the Gazetteer, but special information has been collected from district officers. This compilation has been sanctioned by Government in Government Resolution No. 7813, dated 22nd November 1888, R. D. The district accounts have been revised by the Collectors and Divisional Commissioners.

E. C. OZANNE,
Director, Land Records and Agriculture,
Bombay Presidency.

Poona, December 1888.

PREFACE TO THE SECOND EDITION

Under Government Resolution No. 4587, dated 10th June 1896, Revenue Department, the revision of the first edition of the Statistical Atlas was postponed till after the decennial census of 1901. The revision was not begun, however, till the close of 1904 when Mr. R. D. Bell, I.C.S., was placed on special duty to prepare it.

The results of the census of 1901 and the experience of famine conditions in recent years have been incorporated in the new edition. A separate account has now been written for each district of the Presidency. In the revision of the letterpress and maps assistance has been obtained from local officers in all the Departments concerned.

An important feature of the new edition is the Schedule of Prices prepared under Section 8 (*h*) of the Bombay Famine Code, which should prove of value in judging the indications of approaching distress.

H. S. LAWRENCE,
Director of Agriculture.

Poona, September 1906.

PREFACE TO THE THIRD EDITION

The present edition of the Statistical Atlas of the Bombay Presidency was due in 1916, but owing to the abnormal conditions which prevailed then and in the succeeding years its preparation could not be undertaken until 1923. The compilation of the material was then entrusted to me and the present volume is the result.

In the present edition the aim has been to include all information which would be likely to be useful to an officer who has charge of a district or of a portion of a district, more especially during a period of impending scarcity or famine. For this purpose for each district, statistical data have been included showing conditions prevailing in a normal year (1922-23) and also in a year when occurred one of the most serious and widespread famines of recent times (1918-19).

In other respects the data submitted are much more complete than in previous editions. In the case of Sind, an account is given, not only of the province as a whole, but also of each district. The account of the crops of the Presidency, and especially of the sources of fodder, is much more complete than previously, and many of the results of twenty years' work of the Agricultural Department are noted.

A novel feature of the present edition is the attempt to illustrate by subsidiary maps and diagrams the conditions as to the principal crops, the amount and kind of irrigation, the changes in the number of cattle, and the severity of recent famine years in each district.

I have to thank local officers in every part of the Bombay Presidency for the way in which they have assisted in supplying the material required for the present edition, and I would here also place on record my recognition of the care and devotion with which my chief assistant, Mr. G. R. Ambekar has worked in the preparation of the Statistical Atlas in its present form.

HAROLD H. MANN,
Director of Agriculture,
Bombay Presidency.

Poona, October 1925.

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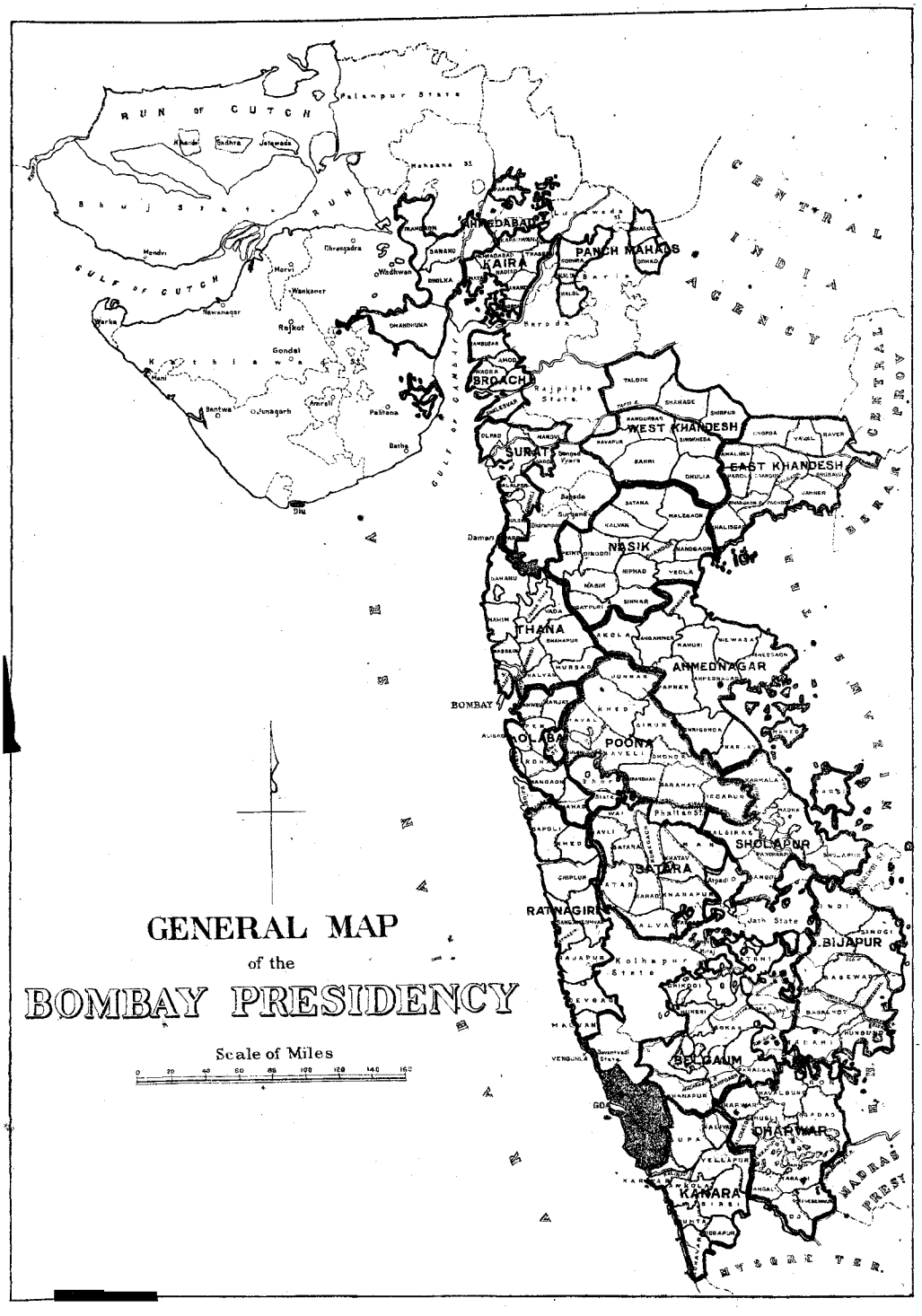


GENERAL MAP

of the

BOMBAY PRESIDENCY

INTRODUCTION

GENERAL

BOMBAY, THE WESTERN PRESIDENCY of British India, is divided into five revenue divisions and twenty seven districts, and comprises three hundred and seventy seven Indian States. In the geographical limits of the Presidency are also included the Portuguese possessions of Goa, Daman and Diu, with an aggregate area of 1,470 square miles, and a population of over half a million, and the State of Baroda with an area of 8,182 square miles and a population of 2,121,875 which is under the political control of the Government of India. The territory thus composed extends from latitude 28° 47′ N. the most northerly point of Sind, to 13° 53′ N. in the extreme south of the collectorate of Kanara and from the longitude of 66° 43′ E. the most westerly point of Sind to 76° 30′ E. the eastern extremity of Khandesh.

The Presidency is bounded on the north-west, north, and north-east by Baluchistan, the British Province of Punjab and the Native States of Rajputana; on the east by the Indian States of the Central India Agency, the Central Provinces, Berar, and the Nizam's Dominions, on the south by Madras and Mysore and on the west by the Arabian Sea.

Between these limits are contained tracts of country varying greatly in climate and physical aspects. Of these the most important are Sind, Gujarat, the Deccan, the Karnatak and the Konkan.

SIND or the lower valley of the Indus, is the most northerly section of the Presidency. It includes the seven districts of Karachi, Hyderabad, Thar and Parkar, Nawabshah, Larkana, Sukkur and the Upper Sind Frontier; and also the Indian State of Khairpur. It differs widely in physical features and climate, no less than in the language, dress and customs of its inhabitants, from the rest of the Presidency; from which it is cut off by the desert or sea. Cultivation in Sind is, as a rule, possible only where irrigation exists, and the Province is thus dependent on the annual inundation of the Indus with its subsidiary system of canals. The surface of the land is a monotonous desert, interrupted by low hills, or undulating sand-heaps, save only where the floods of the great river, or the silver streak of a canal, have transformed a waste of sand and scrub jungle into broad acres of smiling crops.

GUJARAT. In striking contrast to the Sind desert, the plains of Gujarat stand first in the Presidency for richness of soil and density of population. They are watered by many rivers, the most famous of which are the Narbada and the Tapti, whose valleys are sheets of unbroken cultivation. Towards the Rann of Cutch the rich plains pass into salt and sandy waste and the subsoil is brackish. Gujarat contains the districts of Ahmedabad, Kaira, Broach, Surat and the Panch Mahals with numerous Indian states, of which some of the most important are Cutch, situated in an island of the same name and Junagadh, Bhavnagar, Navanagar, Gondal and Morvi, situated in the peninsula of Kathiawar which is connected with the main land of Gujarat by a neck of low-lying land. The State of Baroda is also contained in this geographical division.

DECCAN. The remainder of the Presidency is divided into high and low-level tracts by the rugged line of the Western Ghats or Sahyadris which run parallel to the coast-line for many hundred miles. Behind them lie the scantily watered tracts of the Deccan plateau, for the most part an almost tree-less plain, sloping from the rock-bound *ghat* edge towards the level fields of Berar and Hyderabad. The hills arrest the progress of the south-west monsoon and the land thus left un-watered yields to much labour a bare measure of subsistence. In the valleys of the large rivers, where population clusters near the banks in busy villages, the soil is more productive, but the country is ever haunted by the spectre of famine. The Deccan districts are Nasik, Ahmednagar, Poona, Sholapur, Satara and Khandesh West and East. The last (Khandesh), however, is more akin to the plains of the Central Provinces and Berar (especially in its rich fields of black cotton soil, growing excellent cotton and wheat) than to the Deccan. The Deccan possesses large tracts of rocky and un-cultivable land. To the west, near the *ghats*, where the rainfall is heavy, the main crop is rice grown in terraces in the broken country known as the *ghat*, *matha*, or *mawal*. Over the greater part of the *desh* or level tracts to the east of the above a light rainfall, if seasonable, produces good crops of cereals, chiefly *jowar* and *bajri*.

KARNATAK. South of the Deccan the three districts of Belgaum, Bijapur and Dharwar, with the large Indian State of Kolhapur and a few others, form the Bombay Karnatak. These districts except many parts of Bijapur, enjoy a better water-supply than the arid Deccan plain farther north and are also able to reckon on a more certain rainfall. In Dharwar District, a system of numerous small tanks for water storage permits the cultivation of irrigated crops on a large scale. The Karnatak, again excepting Bijapur, is thus in the west a land of forest and well-watered fields, bearing rice crops beneath the storms of the *ghat* rain-fall and in the east an open plain yielding a sea of wheat, cotton and *jowar* beyond the zone of the heavier monsoon rain. The district of Bijapur is, however, more similar to the eastern areas of the Deccan, than to the rest of the Karnatak.

KONKAN. The low-lying but rugged, tract between the western *ghats* and the sea, termed the Konkan, contains the districts of Thana, Kolaba, Ratnagiri, North Kanara, the newly formed Bombay Suburban District, the city and island of Bombay and the Indian States of Savantwadi, Janjira and Jawhar. It is a difficult country to travel in, for in addition to rivers, creeks and harbours, there are many isolated peaks and detached ranges of hills. The cultivation consists of a few rich plots of rice land and groves of cocoanut palms near the sea and on the lines of the creeks and rivers, with large areas of high lying, poor, and more or less rocky land (termed *varkas*) growing chiefly crops of inferior millets. The whole of both classes of land are watered by a heavy and never failing supply of rain from the south-west monsoon.

PHYSICAL FEATURES

Mountains. The following are the chief mountain ranges, which all have a direction from north to south. In the north-west of the right bank of the Indus, the Kirthar mountains, a continuation of the great Sulaiman range separate British India from the domains of the Khan of Kalat. In Sind, there are low ranges of sand hills and in Cutch and Kathiawar several isolated peaks and cliffs, which form geologically a continuation of the Aravli mountains. Proceeding towards the south-east, an extensive mountain chain is met with, which may be regarded either as a southern spur of the Aravalis or a northern prolongation of the Western Ghats beyond the valleys of the Tapti and Narbada. These hills separate Gujarat from the States of Central India, beginning in the neighbourhood of Mount Abu and stretching southwards down to the right bank of the Narbada. South of the Tapti the country becomes rugged and broken, with isolated masses of rock and projecting spurs, forming the water-shed for the great rivers of the Deccan. This rugged region constitutes, strictly speaking, the northern extremity of the Western Ghats, here called the Sahyadri hills. That great range runs southward, parallel to the sea-coast for upwards of a thousand miles, with a general elevation of eighteen hundred feet above the sea, though individual peaks rise to more than double that height. The western declivity is abrupt, and the strip of land between their scarp and the sea is seldom more than forty miles in width. The *ghats* do not often descend in one sheer precipice but as is usually the case with a trap formation, the descent is broken by a succession of terraces. The landward slope is gentle, also falling in terraces, the crest of the range being in many cases but slightly raised above the level of the central plateau of the Deccan. Apart from minor spurs of the Western Ghats, only two ranges in the Presidency have a direction from east to west. The Satpura range, from the neighbourhood of the fort of Asirgarh to its termination in the east of Gujarat, forms the water-shed between the Tapti and Narbada rivers, separating Khandesh from the Territories of Indore, and attaining an elevation of over five thousand feet. The Satmala or Ajanta hills, which divide Khandesh from the Nizam's Dominions on the south, are of less importance, being rather the northern slope of the plateau of the Deccan than a distinct hill range.

Rivers. The Bombay Presidency has no great rivers which it can call its own. The out-lying province of Sind is penetrated throughout its entire length from north to south by the Indus, whose over-flowing waters are almost the sole means of distributing fertility through that parched region. The plains of Northern Gujarat are watered by a few small streams, the chief of which are the Sabarmati and Mahi, both rising in the Mahikantha hills and flowing south-ward into the head of the Gulf of Cambay. The Narbada in its westerly course to the sea from Central India, has but a short section within the limits of the Presidency. It separates the Territory of Baroda from Rewakantha, and after passing the city of Broach falls into the Gulf of Cambay by a noble estuary. For about a hundred miles from the sea it is navigable at all seasons by country boats and during the rains by vessels of fifty tons burden. The Tapti though a smaller river has great commercial importance. It flows

through the whole length of Khandesh and enters the sea after passing the city of Surat. Both these rivers run for the most part between high banks and have hitherto been little used for irrigation. Passing southwards, the hill-streams which rise in the Western Ghats and flow west into the Arabian Sea are very numerous but of little importance. During the rains they become formidable torrents but in the hot season they dwindle away and almost cease to flow. In the low-lands of the Konkan their annual floods have worn deep tidal creeks, which form valuable high-ways for traffic. On the eastern side of the *ghats* are the head-waters of both the Godavari and Krishna rivers the former of which rises near Nasik and the latter near Mahableshwar. Both of these after collecting the waters of many tributary streams, some of considerable size, leave the Presidency in a south easterly direction, crossing the entire plain of the Deccan on their way to the Bay of Bengal.

Rann of Cutch. The Rann of Cutch being one of the most peculiar natural features in the Presidency deserves mention here. Authorities have not yet decided whether it is an arm of the sea from which the waters have receded or an inland lake whose seaward barrier has been swept away by some natural convulsion. It covers an estimated area of nine thousand square miles, forming the western boundary of Gujarat, but when flooded during the rainy season, it converts the peninsula of Cutch into an island. In the dry season the soil is impregnated with salt, the surfaces in some places being moist and marshy and in others strewn with gravel and shingle like a dry river-bed or sea-beach. At this time the Rann is frequented by numerous herds of antelope, wild asses and wild hogs.

Coast-Line. The coast-line of the Bombay Presidency is deeply indented by the Gulfs of Cutch and Cambay and broken by many bays and creeks; but the only harbours that are sufficiently land-locked to protect shipping during the prevalence of the south-west monsoon, are those of Karachi, Bombay, Karwar, Vijayadurg and Marmagoa.

AREA AND POPULATION.

The Bombay Presidency including Sind but exclusive of Native States has an area of 123,541 square miles and a population of 19,291,719 or 156 per square mile. The various divisions of the Presidency which constitute this area and population together with the density per square mile in each of them are as shown below :—

Division.	Area in square miles.	Population.	Density per square mile.
Bombay City	24	1,175,914	48,996
Bombay Suburban Division	142	152,840	1,076
Northern Division	13,579	3,718,765	274
Central Division	38,262	6,059,114	158
Southern Division	25,028	4,905,709	196
Sind	46,506	3,279,377	71
Total British Districts ..	123,541	19,291,719	156

The Indian States under the Bombay Government cover an additional area estimated at 63,373 square miles and a population of 7,352,929. This is exclusive of Baroda which is no longer under the political control of the Bombay Government.

The States occupy the largest area in Gujarat where they are mostly situated to the north and west of the British Districts. The states in the various groups stand as under :—

Group.	Area in square miles.	Population.	Density per square mile.
Gujarat Group	45,858	4,996,662	109
Konkan Group	1,560	343,636	220
Deccan Group	2,681	334,428	125
Karnatak Group	7,304	1,541,572	211
Khairpur (Sind)	6,050	193,131	32
Total ..	63,453	7,409,429	117

Excluding Bombay City and the Bombay Suburban Division, the density per square mile in the Bombay Presidency varies from 102 in Kanara to 445 in Kaira. In Sind it ranges between 29 in Thar and Parkar and 121 in Hyderabad. In the Native States Sachin records the highest number 476 per square mile while the lowest is in the Dangs where it is only 25 to a square mile. As may be expected the highest density is in the Bombay city where the number of persons to a square mile comes to 48,996, the most congested portions in the centre of the city showing over 500 individuals to the acre.

According to the 1921 census returns, there were 103 places classified as towns (including the seven towns which were classed as cities—Bombay, Karachi, Ahmedabad, Poona, Surat, Sholapur and Hubli) in British Territory and 136 in the States and Agencies. The number of towns and villages of various sizes is as follows :—

	British Districts.	States and Agencies.
Under 500 ..	16,788	11,411
500 to 5,000 ..	9,730	3,860
5,000 to 50,000 ..	204	91
50,000 and over ..	9	2

Seventy-nine per cent. of the population resides in villages of less than 5,000 inhabitants and twenty-one per cent. in towns. In 1891 the urban population was 17 per cent., in 1901, 19 per cent. and in 1911, 18 per cent. The decrease in 1911 was due to plague which had caused temporary exodus from some urban areas. The increase in 1921 is due to the growth of industry and higher wages resulting in immigration into the larger cities.

If we analyse the figures of the 1921 census by castes and religion, it will be seen that for the whole Presidency including Native States, the Hindus inclusive of Jains (481,342) and Animists (189,879) number 21,698,699 or 81·3 per cent. and the Musalmans 4,615,773 or 17·3 per cent. Of these, the Indian States account for 6,550,332 Hindus and 840,675 Musalmans. If these figures are excluded, the British Districts show a total of 14,811,029 Hindus or 76·8 per cent. and 3,775,098 Musalmans or 19·6 per cent. Excluding Hindus the more important sub-divisions of which are treated later, the most noticeable classes are the Musalmans, Christians and Parsis.

Musalmans. In different areas of the Presidency the proportion of the Musalman population varies considerably. Thus, while in the Karnatak and Gujarat, the number of Musalmans is nearly 11 per cent. in both cases it is only 6 per cent. in the Deccan and Konkan divisions. The variations are also considerable in the different districts—where the Musalman population varies from 3½ per cent. in Satara to nearly 23 per cent. in Broach. In Sind the proportion for the whole Province comes to 73 per cent. and ranges between 54 per cent. in Thar and Parkar and 90 per cent. in Upper Sind Frontier. In the Native States the proportion of Musalmans to the total population varies from 1·2 per cent. in Bhor in the Deccan Group to 81·1 per cent. in Khairpur in Sind.

Christians. Christians are very few outside the British Districts, and Indian States record only 14,000 out of a total population of about 277,000. The analysis of the Christian population is, therefore, attempted only for the British Districts. In 1901, they numbered 204,961. This figure rose to 230,632 in 1911 and to 262,620 in 1921. It will thus be seen that they are showing steady progress. Their present distribution in British Districts is shown below :—

Division.	1921	Division.	1921
Bombay City	68,169	Karnatak	14,336
Gujarat	38,331	Konkan	73,721
Deccan	56,332	Sind	11,731
Total, British Districts ..	262,620		

Their proportion to total population rose from 0·85 in 1901 and 0·90 in 1911 to 1·04 in 1921.

Parsis. Out of a total population of 82,696 in the British Districts of the Presidency, the City of Bombay alone accounts for 52,234. The districts of Surat with 11,000, Thana, Poona and Karachi with nearly 3,000 each, and Bombay Suburban, Broach and Ahmedabad each with 2,000 are other important centres where they are found. Like the Christians they are mostly confined to the British Districts their total strength in the Native States amounting to less than two thousand five hundred.

Hindu Sub-castes. The number of these is so large that it is only possible to note the more important of them. The following table gives the strength of the chief groups in the Presidency (including Native States) :—

Tribe or Caste.	Population in 1921.	Tribe or Caste.	Population in 1921.
Marathas	3,105,928	Rajputs	472,623
Kunbis	2,726,614	Vanis	333,773
Kolis	1,617,044	Forest Tribes ..	1,734,346
Lingayats	1,155,610	Weaving communities	222,536
Brahmans	1,029,163		

Marathas and Kunbis. The term Maratha, in some respects, is so loosely applied that it is difficult to determine its precise significance. It is used to describe members of various castes living in Maharashtra, those whose mother-tongue is Marathi and more correctly perhaps to designate the descents of Shivaji's warriors. It is the common impression at the present day that the Marathas properly so called are divided into two groups which do not intermarry, the Kunbi or agriculturist being the inferior and the warrior land-owner or high class Maratha claiming a superior origin (from Rajputs). The dividing line between the two is not however of the nature of a permanent barrier and can be passed by wealthy Kunbis with ambition in proportion to their means. As a whole this class may be said to be almost exclusively engaged and dependent on agriculture.

Kolis. Koli is a most comprehensive term ranging from the caste of a feudatory chief through every gradation of society such as the Talabda Koli of central and south Gujarat who as husbandmen are little inferior in skill to Kanbis, and the fishermen of the north Konkan, to the Chuvlias of Viramgaum who look more like Bhils than Kolis. In the class of Kolis, the Koli of Gujarat (1,265,988) stands first in the point of numerical strength. The Mahadev or Raj Koli of the central Deccan (168,787), the Son Koli (64,063) met with chiefly in the Konkan and the Koli of Khandesh (49,689) stand next.

Lingayats. These are found mostly in the Karnatak and in some of the Southern Mahratta Country States. Though many of them are traders and merchants it cannot be said that it is their sole or even their principal occupation. There are many husbandmen, writers, etc., among them.

Brahmins. There are a number of sub-divisions among them. The chief of these, however, are (*a*) the Audichas (149,605) who, as their name implies, are Aryans from the north ; (*b*) the Chitpavans (109,107) whose home is in the Konkan. Some of them practise agriculture there, chiefly as landlords but sometimes as cultivators, but many have left their home for other parts of the Presidency where they hold different positions and follow various occupations ; (*c*) the Deshasthas (291,247) whose home is in the Deccan and Karnatak where they hold much of the land ; (*d*) the Gaud Saraswats or Shenvis (88,203) who come from the coast, especially from the south Konkan and Kanara.

Rajputs. Rajputs, who include many who falsely assume the title, are composed of various grades of society. They are the ruling caste in Gujarat but some of them are really Marathas. They are found mainly in Gujarat and Kathiawar with a certain number in Khandesh.

Vanis. The Vanis of whom only the principal group are shown in the table are a congeries of trading castes with nothing in common except their occupation. They are chiefly money-lenders and grain dealers.

The remaining larger sub-castes and tribes of the Hindus in the Presidency may be roughly classified as follows :—

I. *Forest and other wild or semi-civilised tribes.*—These chiefly include Bhils (786,726) mainly a forest and hunting tribe, Berads (186,434) the original free-booters of the Karnatak, Varalis (177,391) mostly found in the Dangs and Thana, Thakurs (148,494) one of the aboriginal tribes, Vanjaris (109,025) or carriers of grain, salt, etc., and known as Lamans in the south of the Presidency, Ahirs (174,248) generally met with in Ahmedabad, Kathiawar and the north Deccan, the Naikadas (184,969) one of the wild tribes of Gujarat and a portion of the Kolis chiefly those found in Viramgaum in Ahmedabad.

II. *Depressed Classes.*—These include mostly the Dheds, Mangs, Mahars and Holiyas (1,596,690) who, though untouchable by the higher castes of Hindus yet have a very definite position in village Hindu society as village servants and menials of various kinds, the Chambhars, Mochi, Mochigar or Sochi (282,324) or boot and shoemakers and leatherworkers, and Bhangis, Halalkhors (121,747) or scavengers.

III. *Artisans.*—Among these may be mentioned the weaving communities (222,536) including Koshtis, Hatgars (90,608) and Salis (68,308) or weavers of the Deccan and Karnatak and Patvekaris (63,530) or silk-tassel twisters, chiefly met with in Gujarat and the Karnatak.

Among other classes of artisans are the Malis (295,640) or gardeners and flower-merchants, Kumbhars or potters (258,181), Sutars or carpenters (213,527) Sonars or Goldsmiths (188,094), Hajams and Nhavis or barbers (188,029), Bhandaris or toddy-tappers (179,103), Darzis or tailors (141,112) and Lohars or blacksmiths (84,321).

IV. *Shepherds and herdsmen.*—They number 792,064 and are the Dhangars of the Deccan, the Kurubs in the Karnatak and Bharvads in Gujarat.

These, with a few additional cultivating castes of the status of the Maratha Kunbi, such as Agris generally cultivators and salt makers in north Konkan, Rabaris or the cultivators and graziers of north Gujarat, etc., etc., account for the most important sections and form over 80 per cent. of the Hindu population of the Presidency.

OCCUPATIONS

An examination of the 1921 Census Returns shows the following results :—

64	per cent.	supported by	Pasture and Agriculture.
4	,,	,,	Textile Industries.
3	,,	,,	Trade in Food-stuffs.
2	,,	,,	Dress and Toilet Industries.
1¾	,,	,,	Professions and Liberal Arts.
1⅗	,,	,,	Public Administration.
1½	,,	,,	Domestic Services.
1¼	,,	,,	Begging and Disreputable Occupations.

Of these the most important are noted below :—

I. *Pasture and Agriculture.*—The agricultural population falls below 50 per cent. in only three districts, Bombay Suburban, Ahmedabad and Karachi, which all contain industrial centres in the form of large cities. The Panch Mahals with 79, West Khandesh with 73, and Ratnagiri with 76 per cent. each stand highest. Changes in classification prevent any accurate comparison being made in the Sub-divisions of the Agricultural population such as rent receivers, rent payers, field labourers, etc., between one census and another.

II. *Industry and Commerce.*—Ahmedabad, Surat, Kanara, Broach, Sukkur and Karachi show 25, 17, 16, 14, 13 and 12 per cent. respectively of their population supported by industry. Kolaba with 5 per cent. has the smallest share, in spite of its nearness to Bombay.

The districts with the largest proportion of their population supported by commerce are Karachi 17 per cent., Sukkur 14 per cent., and Ahmedabad 11 per cent.

Textile Industry.—Under Industry may be mentioned the Textile Industry the progress in which is shown by the following figures :—

Cotton Industry :—

	1921	1911	1901
Mill-hands	341,869	193,112	105,515
Home-workers	357,707	267,719	184,718

From this it will be seen that the Cotton Industry is showing a substantial advance from decade to decade. The industry in other textiles such as wool, jute, etc., is of no great consequence in the Bombay Presidency.

Handicrafts.—Under this heading may be noted hand-loom-weaving which is still a flourishing industry in the Bombay Presidency, dyeing mostly practised in Ahmedabad, Kaira, Sholapur, Belgaum, East Khandesh and Ahmednagar, silk work chiefly carried out in Surat, the Karnatak and Satara, wool-spinning which as a cottage industry is carried on all over the *Presidency* and supports over 40,000 persons, and the leather industry which supports over three lakhs of population.

LANGUAGES

The languages of the Bombay Presidency are distributed as follows :—

In the North, Sindhi is the mother tongue of the majority of the inhabitants of Sind, and is understood by nearly all. 164,000 talk in their homes Jatki or Saraiki, 202,000 speak Balochi and 45,000 Brahui. South of Sind, Kachhi which is recognised as a form of Sindhi, is spoken in Cutch.

Gujarati and Hindi are the principal languages in the five districts of Gujarat. Thana, the Central Division and the districts of Kolaba and Ratnagiri in the Konkan, are the home of Marathi, different forms of which are spoken above and below the Ghats.

In the wilder parts of Khandesh the hill-tribes express themselves in dialects classed as a separate language—Bhili ; and these dialects tend to resemble either Gujarati or Marathi according to their distance from places where these languages are in use.

The Southern Division is divided between Kanarese and Marathi the former slightly ahead of the latter numerically. Marathi is most common on the coast. Kanarese extends as far north as the southern part of the Sholapur district and is spoken by an appreciable number in the south of Satara. The Feudatory States resemble the adjacent British Districts.

The position of the four main languages (including kindred dialects) of the Presidency is clearly shown in the following figures (thousands omitted) of speakers :—

Marathi	9,791	or 37 per cent.
Gujarati	7,404	or 28 ,,
Kanarese	2,943	or 11 ,,
Sindhi	2,618	or 10 ,,

Thus over 86 per cent. of the population use a language or dialect included in these four. The only other languages of any importance are Hindi, Rajasthani, Bhili and Telugu of which Hindi and Bhili are indigenous and the other two are languages of immigrants, namely merchants and bankers from Marwar or Madras

FAMINE

The usual cause of famine or scarcity is partial or total failure of the crops due to insufficient or unseasonable rainfall or both. Occasionally great damage is locally caused to standing crops by locusts, rats, floods, frost, insect-pests, etc., etc., but the injury done thereby has never been known to be so serious as to cause a famine.

A very large proportion of the population of the Bombay Presidency being dependent on agriculture for their livelihood, the effects of the failure of crops are widely felt. In the case of the labouring classes usually employed in the fields, the pressure of bad seasons is enhanced by the fact that the same cause greatly increases the cost of food while it decreases the prospects of employment. Things, however, have changed during the last few years and this class is now not so hard pressed as before, as the natural relief that is afforded by the growth of industries, has a striking effect in ameliorating famine conditions, as was evidenced in the recent very severe famine of 1918-19.

The following table gives the details of area, population, land revenue, etc., of each Division in the Presidency.

Province.	No. of Districts in each Province.	Area in square miles.	Population.		Land Details 1922-23.			Land Revenue 1922-23.			Average rainfall.
			Total.	Per square mile.	Cultivated. Per cent.	Cultivable. Per cent.	Uncultivable. Per cent.	Gross including alienation.	For Collection.	Collections up to 31st July 1923.	
								In thousands of Rupees.			
Sind ..	7	46,506	3,279,377	71	30·9	20·3	48·8	12,428	11,962	11,857	6
Gujarat ..	5	10,145	2,958,849	292	73·5	4·5	22·0	12,142	10,137	10,015	37
Konkan ..	5	13,680	3,031,669	222	45·7	1·4	52·9	4,962	4,830	4,816	101
Deccan ..	7	38,262	6,059,114	158	70·2	1·7	28·1	15,697	13,384	13,122	29
Karnatak .	3	14,924	2,786,796	187	82·2	1·6	16·2	8,259	6,276	5,568	37
Total ..	27	123,517	18,115,805	147	54·3	8·9	36·8	53,488	46,589	45,378	..

With the difference in rainfall, soil, facilities for irrigation, etc., etc., the intensity or frequency of famines also varies in different tracts. Thus Sind, with an area of 46,506 square miles or 37·7 per cent. of the total area of the Presidency, a population of 3,279,377 or 18·1 per cent. and a land revenue of Rs. 1,19,62,000 is practically immune from famine. Here, except in Kohistan in the Karachi district and in the desert portion of Thar and Parkar, which are dependent for their cultivation on rainfall, famine from the failure of rains is almost impossible, as the cultivation depends on the inundation of the Indus which, though very much varying in height and duration from year to year, hardly ever fails, and on the irrigation canals dependent on the river which traverse all the districts of the Province.

From the point of immunity from famine the Konkan (including Kanara) which is a region of heavy rainfall, with an area of 13,680 square miles or 11·1 per cent. of the whole Province, a population of 3,031,669 or 16·7 per cent. and a land revenue of Rs. 48,30,000 ranks first in the Presidency. It cannot however, be said that famine is unknown in the area for in the famine of 1899-1900, the northern portion of Thana suffered, while in the famine of 1918-19 scarcity prevailed almost throughout the entire area.

Gujarat, with an area of 10,145 square miles or 8·2 per cent., a population numbering 2,958,849 souls, and a land revenue amounting to Rs. 101,37,000 may be said to hold an intermediate position, as it is neither as immune as the Konkan from famine, nor as liable to it, as the eastern portions of the Deccan and Karnatak. It depends for its cultivation on rainfall, which though not so heavy or regular as in the Konkan has not hitherto been considered to be as uncertain as the eastern portions of the Deccan and Karnatak. There is no doubt, however, that Gujarat, and especially the northern parts, have not been nearly as immune from drought and the resulting famine, as was formerly the case, and this fact is one of the most disquieting features of the present out-look.

The remaining two divisions of the Bombay Presidency are the Deccan and the Karnatak. Excluding Khandesh which has an area of 10,952 square miles and a population returned at 1,717,684 and a land revenue of Rs. 5,852,000 and which is far less liable to drought than the rest of the area, they comprise the eight districts of Nasik, Ahmednagar, Poona, Sholapur, Satara, Belgaum, Bijapur and Dharwar with an area of 42,234 square miles, a population of 7,128,226 and a land revenue of Rs. 13,808,000.

According to their immunity from famine these may be divided into three portions :—

(*a*) The Western portion called the *Mawal, Dongri, Dangs* or *Mallad*, according to the difference in locality. This comprises roughly two-fifths of Nasik, one-fifth of Poona, one-third of Satara and Dharwar each, and one-fourth of Belgaum together with a part of the Akola taluka in the Ahmednagar district,—all in the vicinity of the Sahyadris. This region generally receives a certain and heavy rainfall and forms a tract enjoying almost, though not quite, complete immunity from famine. This tract suffered in the famine of 1918-19 to an extent previously almost unheard of.

(*b*) The eastern portion called the *Desh* :—This embraces the districts of Sholapur, Bijapur and Ahmednagar (excluding the Akola taluka), approximately two-fifths of Nasik, Satara and Belgaum , one-half of Poona and about two-thirds of Dharwar. This is the famine tract of the Presidency. Here the ordinary rainfall is so limited that a small reduction or postponement of the monsoon showers materially diminishes the crop output and that is why this tract is chronically liable to famine. The peculiarity of the area is moreover that here the heaviest rain occurs in September and the most valuable crops are sown during the late rains that is, during September or October. Hence, the early cessation of the monsoon produces the most serious results far exceeding the loss caused by deficiency at the beginning.

(*c*) A transition tract situated between the two and including the remaining portion of the Deccan and Karnatak which, like Gujarat and Khandesh, holds an intermediate position both regarding certainty and sufficiency of rainfall and immunity from famine. The areas not (ordinarily) liable, less liable and very liable to famine are summarised below for the Deccan and Karnatak districts :—

Nature of tract.	Area in square miles.		Population No.	
	Total.	Per cent.	Total.	Per cent.
Not liable	24,498	31·9	54,86,739	36·9
Less liable	26,595	34·5	56,14,824	37·9
Chronically liable	25,918	33·6	37,34,865	25·2
Total ..	77,011	100·0	1,48,36,428	100·0

A complete chronological record extending over a century of famines that occurred in the Presidency is given in Appendix A.

RAINFALL

The rainfall of the Bombay Presidency is derived chiefly from the south-west monsoon, between June and October. But in the eastern tracts of the Deccan and Karnatak this supply is greatly supplemented by the fall of the north-east monsoon which follows the close of the south-west monsoon. The south-west monsoon touches north Kanara, the southern most district first and works its way up towards Gujarat. As it advances, the amount of precipitation for which it is responsible decreases from south to north along the coast. Thus, Bhatkal at the extreme south on the coast of Kanara receives an annual rainfall of 150 inches ; Ratnagiri about two hundred miles north receives 96 inches, Alibag another hundred miles in the same direction has only 86 inches, while Umbargaon in the north of the Thana district receives only 62 inches.

The high range of the Western Ghats, inasmuch as it arrests the surcharged clouds, receives more rainfall than the coast-line over which the clouds come. Thus Ratnagiri, Guhagar, Alibag and Mahim being on the coast-line receive 96 inches, 92 inches, 86 inches and 62 inches of rainfall respectively, while Sangameshwar, Chiplun, Lonavla and Igatpuri being on or near the *ghats* in the same latitude as the above places receive 146 inches, 141 inches, 168 inches and 130 inches respectively. It will thus be seen that the western face of the Western Ghats arrests much of the rain. The line of the Western Ghats which runs nearly parallel to the coast and the ramifications of the *ghats* on the eastern side, cause considerable variation in the amount of rain received in the Deccan and Karnatak districts, as the current of the south-west monsoon has to pass across the *ghats*. The Deccan districts have a slight slope to the east, away from the Western Ghats and most of the rain which crosses the *ghats* falls in

the uplands. The rainfall map shows how the rainfall decreases eastward and to a less extent west-ward from the summit of the *ghats*. Khandesh and especially East Khandesh receives a little additional rainfall from the east, from wind-currents originating in the Bay of Bengal.

By about September the force of the south-west monsoon decreases fast and soon after, a series of storms, arriving apparently from the north-east, supplies rain to Ahmednagar, Sholapur, Bijapur and the eastern parts of Dharwar and Belgaum. Sometimes these storms spread further west, but as a whole they form perhaps the most doubtful factor in the annual rainfall.

The Bombay Presidency can be divided into the following tracts on the basis of rainfall.

(1) The heavy rainfall tract—comprising the Konkan and a narrow strip of about 15 to 20 miles on the crest of the Western Ghats from Kanara to the Narbada in the western parts of West Khandesh. This tract receives 80 inches or more of rain annually, the stations which are actually on the crest of the Western Ghats recording very large quantities up to from 250 to 300 inches per annum. As has already been noted, the rainfall in this tract decreases as one proceeds north, from 150 inches at Bhatkal the southernmost point to 60 inches at Umbergaon in the north of Thana.

(2) The *Mawal* or *Mallad* tract:—This tract receives from 35 to 50 inches of rain per annum. It lies immediately to the east of the tract described above, and usually has an elevation above the sea of two thousand feet or more. It embraces the western portions of the districts of Nasik, Poona, Satara and the Akola taluka of Ahmednagar in the Deccan, and of Belgaum and Dharwar in the Karnatak. The distribution of the rain is very similar to that of the heavy rainfall tract already dealt with.

(3) The *Desh* tract:—To the east of the *Mallad* or *Mawal* tract lies what is usually called the *Desh* and in this region the land becomes much more level, while the rainfall is much smaller and more uncertain as one proceeds to the east. The rainfall, in fact, varies from a little over 30 inches on an average in the western part of the area to an average of about 22 inches in the eastern tract. The latter is that portion of the Bombay Presidency which is chronically liable to drought and hence to famine. In these eastern parts, moreover, the chief dependence is on the rain in August and September, and hence the people mainly rely on *rabi* crops—*rabi jowar*, wheat, oil seeds or cotton planted late.

(4) The *Khandesh* tract:—The Khandesh tract consists almost entirely of the valley of the river Tapti, and the surrounding country. It receives from 20 to 30 inches of rain per annum and has rainfall features of its own.

At this latitude the Western Ghats are no longer the formidable barrier that they are further south but on the other hand the Satpura range, which forms the northern boundary of Khandesh and of the Bombay Presidency, intercepts a great deal of the rain which is passing north in the south-west monsoon current. At the same time the country is open to the east and a certain amount of rain from the Bay of Bengal current of the monsoon reaches Khandesh. As a result of these features, the rainfall of Khandesh though only from 20 to 30 inches annually in amount, is much more certain than in the *Desh* country further south. It is, however, almost limited to the south-west monsoon and little late rain in September or October can be relied upon.

(5) The *Gujarat* tract:—The level plain which stretches from the coast to the east and north from the confines of the Thana district and including the districts of Ahmedabad, Kaira, Broach, Surat and the Panch Mahals is known as Gujarat. The rainfall which in the extreme south is from 50 to 60 inches annually soon becomes not more than 40 inches at Surat and less and less from that point as one goes north. It is, moreover, entirely a rainfall of the south-west monsoon and it stops as a rule in September. After this time no appreciable amount of rain falls until the following June.

Month.	Kaladgi.		Baramati.	
	1871	1876	1904	1905
	Inches.	Inches.	Inches.	Inches.
January to April..	0·41	0·71	..	0·18
May ..	1·54	1·10	0·40	1·34
June ..	3·67	6·83	1·56	2·89
July ..	0·55	1·00	0·45	1·26
August ..	2·53	0·10	0·07	1·95
September ..	2·57	2·53	5·87	0·29
October ..	2·43	1·07	3·83	4·12
November ..	0·22	..	..	0·41
December ..	..	..	..	..
Total ..	13·92	13·34	12·18	12·44

From the above, it will be seen how the rainfall varies in amount and distribution in the various tracts of the Presidency. It may here be remarked that it is not only the amount of rainfall which can fix the position of a tract as liable to or safe from famine generally or in particular years. It is, of course, impossible to lay down the precise limits of beneficial rainfall. It will be readily admitted that a good steady soaking rain is far more advantageous than a brief downpour which drains off the surface and does not penetrate the soil. The falls of 1871 and 1876 at Kaladgi for instance were about the same in amount (see the table in the margin) but so vastly different in character and seasonableness that the former year enjoyed a fair season while the latter brought on severe famine, the rain coming as it did almost all in a few heavy showers. Similarly at Baramati the rainfall in the years in 1904 and 1905 was almost exactly the same in amount but with the difference in distribution there was a marked difference in the seasons. It will thus be seen that the mere amount of rainfall in a particular year at a particular place does not tell the whole story of seasonal conditions. It is in fact the effective amount received that matters in all cases.

As already stated, the problem of laying down the precise limits of a beneficial or effective fall is very difficult to tackle with but attempts in the direction, owing to the vital importance of the subject, are now being made. The theory, among other things, consists of excluding the ineffective portions of downpours which rather drain off the surface than penetrate the soil and in leaving out of account very insignificant falls which are evaporated on the hot earth no sooner they reach the land, or of fixing a minimum amount of continuous moisture essential for the development of crops. The study on these lines is still in its infancy but with some progress in the direction it is thought that it will be possible to say somewhat definitely and perhaps more correctly the position of a tract in a particular year so far as its seasonal factors dependent on rainfall are concerned.

SOILS

The soils of the Bombay Presidency vary according to the natural divisions which have already been described.

In Sind the soils are wholly alluvial; they vary in character from drift sand to light clays and are often markedly impregnated with salt.

In Gujarat they are classed in two main divisions, *kali* and *goradu*. The first is black cotton soil of which extensive tracts are found in Broach and Surat. It is supposed to be the result of alluvium brought down by the Tapti and Narbada rivers, and corresponds to the *regur* of the Central Provinces. *Goradu* soils are characterised by great depth, varying from the drift sands of Ahmedabad to the rich loam of Kaira. They are entirely alluvial.

Khandesh.—The soils of Khandesh are essentially derived from trap rock and are hence of the black cotton soil type. Their depth and retentiveness, however, varies a good deal according to their distance from the Tapti river. Along the flat area near the Tapti river the soil is deep and retentive but further from the river it decreases in depth till on the edge of the valley, it is not only shallow but has the dry hungry character of freshly decomposed trap rock.

Deccan and Karnatak.—Characteristic of the Deccan is the black soil formed from the weathering of the trap rock of which the broad wheat, cotton and *Jowar* lands of Khandesh, Nasik, Ahmednagar, Sholapur, Bijapur and Dharwar are formed. Near the hills the soil is lighter coloured and less rich. In the valleys of the south-west the reddish-brown laterite is terraced into rice lands and the beds of the streams grow rice crops during the hot season. The bottom soils are clay loams of great natural fertility. These form the greater part of Belgaum and Dharwar.

Konkan.—In the Konkan soils are classified as rice lands, garden lands and *varkas* lands. The rice lands may be either *malla* or low-lying rich land, or *kuryat* or land lying on the slopes of low hills which are terraced in order to hold water and prevent erosion or *kharvat*, that is to say, land reclaimed from the sea. The garden lands are so called from the fact that they have command of well or other water for irrigation and have been levelled and otherwise prepared for garden crops, which, in this case, include betel palms, cardamoms and pepper in the Kanara district and fruits, ginger and sugarcane over most of the tract. The *varkas* or uplands lying on the slopes or tops of hills and plateau in the Konkan, consist of shallow and poor soil. They are, inspite of an assured rainfall, among the most barren lands in the Presidency and only yield coarse-grains at long intervals.

MINOR CAUSES OF DISTRESS

In appendices *B, C & D*, are shown chronologically the details and extent of distress caused by plagues of locusts and rats, and by floods. These statements show that such minor causes can not cause actual famine. They are, however, important in reducing the reserve which may be available to the people in a real year of famine.

The effect of crop diseases and pests is similar. They do not directly cause famine, but they are apt to reduce the quantity and value of the crop to

such an extent as to place them on a non-paying basis. The methods by which such diseases and pests can be dealt with or prevented have been the subject of numerous investigations in recent years, but it cannot be said, except in a few cases, that they can be dealt with in a manner practicable on a large scale. The following are some of the pests and diseases, classified according to the crops they attack whose ravages make a serious difference to the production of the Bombay Presidency, and whose special prevalence in any year means much distress to the people.

Jowar, the most important grain crop in the Bombay Presidency, is attacked by two very important enemies, the smut or *kani* diseases, and the *jowar* borer. The former of these, for there are several forms, converts the head of grain or the individual grains in the head into black powder, and these are hence entirely worthless. It is very common, though much more so in some years than in others, and probably causes, on the average, a loss of about eight per cent. of the yield. This means an annual loss of over a crore of rupees to the Bombay Presidency. The most common form of this can be easily checked completely by treatment of the seed with copper sulphate solution, of which full details can be obtained from the Agricultural Department.

The other enemy of the *jowar* crop is the borer (or rather borers, for these are several), which bore into and kill the main stem of the *jowar* plants, and attack them at all stages. The loss on this account varies very much from year to year, but in bad years the loss is often from five to ten per cent. of the crop in special areas. There is no known remedy, but the matter is under vigorous investigation by the Agricultural Department.

Bajri, the second most extensive cereal crop, is attacked on a very large scale by the Green Ear Disease (*sclerospora graminecola*) which usually causes a complete loss of the grain in infected plants. In bad cases over thirty per cent. of the ears in fields have been known to be affected. Beyond the fact that it is carried by the seed, little is known of the method of distribution of this disease, and hence of methods of checking it.

Wheat—This crop has one fungus disease, namely rust (Marathi *Geru Tambera*; Kanarese *ittangi*, *kunkum rog*), which is known in all the wheat growing countries of the world, and is very serious in India. It is aggravated by wet conditions, and may be specially severe in irrigated regions. The only method of prevention is to sow seed from a resistant type of crop. Such types have been obtained suited to many parts of India, and guidance as to the best types to plant can be obtained from the Agricultural Department.

Rice is affected by stem borers, particularly in the Konkan, and by a special grasshopper pest, the latter particularly in the neighbourhood of Belgaum. There is no known method of dealing with the former, and its seriousness is very largely a matter of season. The latter, which at one time threatened to destroy the crop of rice near Belgaum, has been kept in check by systematic collection of the young hoppers by large bags dragged across the fields.

A pest which often threatens all the cereal crops (chiefly maize and *jowar*) in the Panch Mahals and parts of the Kaira District, is the *Katra* caterpillar (*Amsacta moorei*) which attacks the young seedlings when a few days old. In a bad year it causes the necessity of sowing several times, and often the loss of the season. The most promising method of dealing with it is by dusting the crop with a mixture of Paris Green and lime, but the matter is still under experiment.

Sugarcane may be ruined by two enemies, the sugarcane borer, and the red rot disease. The former, which in some years have almost caused the complete distruction of the crop in some parts of the Deccan can be checked by early planting in January or February, instead of in March or April. The latter (red rot) is caused by a fungus and is carried in the seed, and can be checked by very great care in selecting the canes used for seed.

Cotton is also seriously damaged by two enemies. The first of these is the cotton wilt which causes a very large loss of plants in the field in many areas, particularly in Upper Gujarat (including Broach), and in the south of the Bombay Presidency. At present no method is known of checking it, but some strains of seed are much more liable to be attacked than others, and great efforts are now being made to discover and multiply such immune strains. The second enemy of the cotton plant is the bollworm, of which two forms occur, the spotted bollworm (*Earias*) and the pink bollworm (*Gelechia gossypiella*) of which the former is by far the most important: They attack the young leaves, the flower buds, and the bolls and in the last case may either cause the bolls to fall or spoil the cotton. They often reduce the possible number of healthy ripe bolls on a plant by fifty per cent. So far no method of checking them has been effective but their control is under careful investigation.

Wilt diseases of many crops not only of cotton, but also of tobacco, and of many pulse crops, notably *tur* or pigeon pen, are among the most destructive of diseases, and annually take a very substantial toll from the farmers. The plants, in all these cases, suddenly die in the field, either singly or in groups, and it is usually obvious that the infection is in the soil. They can usually only be checked by avoiding (or replacing in the case of tobacco) the infected soil with that crop, or by discovering strains of seed, whose progeny is resistant to the disease. So far, except in the case of cotton, such strains have not been discovered in Bombay in the case of plants affected.

Those pests and blights which cause such a large loss as to make an appreciable reduction in the total annual production of the crops of the Bombay Presidency only are considered here; but mention must be made of the many species of plant lice, aphids and jassids, called in the vernacular *mava* or *chikta* which commonly attack many crops in cloudy or misty weather. These can only be treated with very valuable crops like lucerne, where spraying with *incosopol* has proved a great success. The regular and large damage done by white ants must also be referred to, particularly serious in Upper Gujarat, though no very satisfactory means of checking their ravages even in the case of fruit-trees are known.

MEASURES OF PROTECTION AGAINST FAMINE

These may be considered briefly under the following heads:

(A) Improvements in general administration tending to raise the credit of the cultivator and his standard of subsistence, and to encourage better cultivation and more forethought by giving the necessary incentive.

(B) Direct and indirect protective works, *e.g.*, irrigation reservoirs and canals, roads and railways, on the one hand, and encouragement of private enterprise in digging and repairing wells, and in training water channels from running streams, on the other.

(C) Preparedness for the advent of famine.

A.—ADMINISTRATIVE IMPROVEMENTS

Survey Tenure. The land holders of the Presidency are for the most part, and almost entirely in the tracts liable to famine, occupants under the tenure introduced by the Survey Department, which is virtually the old *Miras* tenure of the Deccan, shorn of some peculiar features no longer suitable to the conditions of the country. The survey occupant holds his land direct from Government. He has full power to sell, mortgage or sublet his land and full incentive and power to improve it agriculturally, the profit of improvements effected being guaranteed to him. The land is subject to a charge, assessed according to its productive capabilities and liable to revision at intervals of thirty years. The first assessment was regulated strictly by the condition of each field as found, but after this first survey and classification, after the introduction of the survey tenure in fact, the relative valuation of the survey fields cannot be altered except by reason of improvements effected at the cost of Government. The revised assessments are based on general considerations of the rise or fall of the prices of agricultural produce and not on a re-examination of the conditions of each field. It must be carefully noticed further that the rent-charge on the land is scrupulously graduated by the regularity and certainty of rainfall in each group of villages. Thus, in tracts chronically liable to failure of crops a due discount is allowed. The security of tenure and the immunity from taxation of private improvements in the land place the cultivator in a position superior to his condition under former rule, and give him a power of resistance in famine, which the great famine of 1876-77 first put to the test.

The New or Restricted Tenure. A modification of the full survey tenure is known as the restricted tenure, which was introduced in 1901 by the passing of the Land Revenue Code Amendment Act. Under this Act the Collector is enabled to give out lands on short leases and special tenures which may include a restriction on transferability whether by private contract or by attachment and sale under the orders of a Civil Court, notwithstanding that a survey settlement may have been extended to these lands. For the advantage of those cultivating classes, who are so imperfectly civilised as to be incapable of protecting their own interests, the Act also provides that the Collector may, in his discretion, declare any occupancies to be unalienable without affecting in any way the heritable rights of the occupants in tracts notified at the time of extending the survey settlement. Soon after the passing of the Act, during a period of thirty months ending 31st December 1903, 218,800 acres of land were forfeited chiefly in the following districts:

Panch Mahals	..	149,700 acres or 68 per cent.
Ahmedabad	..	23,900 acres or 11 per cent.
Kaira	..	21,600 acres or 10 per cent.
Surat	..	12,900 acres or 6 per cent.

Of these, 149,800 acres or about 68 per cent. were voluntary forfeitures mostly in the Panch Mahals (147,500 acres), where the non-transferable tenure

was considered more suited for the occupants, who were accordingly induced to accept it. Of the total area forfeited, 210,700 acres or nearly 96 per cent. were left with the original occupants on the altered tenure and the rest given to others.

Suspensions and Remissions of Land Revenue. Another measure in the same direction is the introduction of a regular system of suspensions and remissions of land revenue when the crops fall below a certain standard or when the water-supply on the irrigated lands fails. The assessment fixed under the survey settlement is a fixed demand and represents the revenue capable of being paid on an average in a series of years, the original idea being that on an average the *rayat* saves in a good year sufficient to enable him to pay the assessment without borrowing in a bad year. Experience, however, showed that among the smaller landholders and in tracts subject to frequent vicissitudes of the season, this idea was fallacious, and in 1906-07 a regular system of suspensions and remissions was introduced.

The system authorises the Collector, when he has ascertained by local enquiries that owing to partial or total failure or destruction of crops throughout any tract, suspension of the collection of land revenue is necessary, to grant suspensions according to a scale to all occupants, agriculturists and non-agriculturists alike, without enquiry into the circumstances of individuals. As regards remissions, the grant of them depends on the character of three seasons, following that in which the assessment is suspended. Ordinarily, suspended arrears which are more than three years old are to be remitted by the Collector. The remissions are to be granted to occupants cultivating their own holdings and also to non-cultivating occupants provided that when land is cultivated by tenants, corresponding remission is granted by the superior holder or land-lord to the inferior holder or tenant.

Takavi advances. Famine and scarcity have brought the *takavi* system prominently to the front.

In a year of famine, the advances enable land-holders to make arrangements with labourers, which Government cannot, to ensure the most profitable employment of the money. Congenial means of earning a livelihood are thus provided, and so far the dislocation of the village organisation and of household arrangements is avoided ; while the relation between land-holders and tenants, between masters and servants, and generally between employers and those they habitually employ is maintained.

In 1877-78, that is, in the year following the famine, the advances had risen to about three lakhs, but in the next eleven years they ranged from Rs. 40,000 in 1880-81 to Rs. 90,000 in 1886-87. In 1888-89 the Collector of Belgaum made special efforts to popularise the system by posting notifications in every *chavdi* and school throughout the district with the result that the total amount advanced rose to nearly two and a half lakhs of rupees in 1890-91, of which Belgaum and Dharwar alone took one and a one-third lakhs. In these districts also it was observed that the *savkars* had materially lowered their rates of interest. But the system was really stimulated by the famine of 1891-92. In this year the advances rose to over twelve lakhs of rupees, of which the affected districts of the Deccan and Karnatak took over ten lakhs. These advances were largely used in sinking new wells and repairing old ones, in building bunds and in eradicating deep-rooted grasses. They averted a vast amount of distress, saved a large expenditure on relief works and produced permanent agricultural improvement. In the subsequent years there was not the same need for large advances, but the system continued to be popular, and when the occasion arose for them in 1896-97 the advances amounted to over thirty-three and a half lakhs of rupees and in the next year to twenty-three lakhs of rupees. Out of this total of fifty-six and a half lakhs of rupees, fifty-two lakhs and a half were taken by the affected districts of the Deccan and Karnatak as follows :—Bijapur (13·38), Ahmednagar (8·92), Poona (6·05), Sholapur (5·92), Satara (5·04), Belgaum (4·35), Dharwar (4·0), Khandesh (2·56) and Nasik (2·03) and were expended for the following purposes :—Wells (22·34 lakhs), other land improvements (15·47 lakhs), seed (4·16 lakhs), plough cattle (5·37 lakhs), subsistence (1·66 lakhs) and other purposes (3·97 lakhs).

In the famine of 1899-1900 the system was still further popularised and even the backward classes of agriculturists, such as the Bhils of the Panch Mahals and the Kaliparaj of Surat, availed themselves of it to a very large extent. In Gujarat before 1899-1900, the stimulus of famine and scarcity was wanting and the sums advanced did not exceed forty-three thousand in any year. In 1899-1900, however, over five lakhs of rupees were given out in that province during the period from September to March for construction of wells alone. A few years ago the difficulty was to get cultivators to understand the advantages of the system ; the difficulty after 1899-1900 has been to meet the demand. During the three years and seven months from 1899-1900 over two crores of rupees were distributed in the affected districts. Of this sum, nearly fifty lakhs of rupees were advanced under the Land Improvement Loans Act and of this seventy-five per cent. was granted for the construction and repair of wells. Of the remainder of over one crore and a half made under the Agriculturists Loans Act, nearly forty-three per cent. was granted for seed, forty-two per cent. for cattle and seven per cent. for fodder.

After 1902-03, there was no famine year till 1911-12 (though in the year 1905-06 scarcity was experienced in many places). In this year (1911-12) loans were advanced on an unprecedented scale—to the extent of over seventy lakhs of rupees—and it was found possible to do this on a secure basis only by taking full advantage of the ' joint-bond ' system by which loans were advanced to whole villages on their joint security. In this way it was possible to reach the meanest individual. In the widespread and acute famine of 1918-19 the advances further rose to about one and a half crores of rupees of which one lakh and nine thousand were granted under the Agriculturists Loans Act and were utilised mainly for the preservation and replacement of cattle and the purchase of seed, while the amount of forty lakhs under the Land Improvement Act was spent towards digging of many new wells and repairing old ones. The year 1920-21 though not of such severe and widespread distress as 1918-19 was still a year of famine and advances to the extent of over eighty lakhs of rupees were found necessary. Of this sum, over fifty lakhs were advanced under the Agriculturists Loans Act and were utilised for the purchase of seed and cattle, while the remaining amount of about thirty-two lakhs was spent on digging of many new wells and repairing old ones.

Forest Conservancy. The attention paid in recent years to the subject of forest conservancy must be regarded as an important administrative improvement tending to mitigate distress and perhaps to prevent it in some measure. Whether the theory that the rainfall will be made more seasonable, plentiful and regular by the conservation of tree growth and the *reboisement* of bare hills is sound or not, the salutary results of the conservation of the land included in forest are important.

As population increases the only way to make the food supply keep pace with the demand will be to get more out of the soil by better cultivation. The time must come when the further extension of cultivated areas will no longer be possible. This time has already arrived in some districts. By placing all available and suitable land under the Forest Department, the people at some cost of present difficulty are thrown on their own resources, and better cultivation of their present lands is made imperative, while a reserve exists in the forest areas, part of which may hereafter, on necessity, be made available for cultivation.

The direct action of the Forest Department has caused a large increase in the grass supply of those districts which are worst off for fodder, and where the cattle in famine are reduced to the greatest straits. Thus not only is the annual supply of grass increased, but a reserve is kept for use in time of great dearth. The facilities of transport make it even possible to throw in supplies of fodder from non-affected districts to those in great distress.

The advantages claimed for Government forests as a source of fodder supply in times of famine were fully illustrated in the last severe famine of 1918-19. A number of grass depôts were opened at suitable places in the affected districts and grass was sold at very moderate rates. This arrangement was found very effective in places and tended to save very large numbers of cattle from starvation. Forests were also used as grazing grounds for the cattle of the affected districts.

The total forest area of the Bombay Presidency proper is roughly fourteen thousand square miles. In forming the Bombay forests all available waste land was placed under the Forest Department and much of this consisted of almost bare rocky hills with thorny bushes and a few stunted trees. Owing to short rainfall, *reboisement* of the Deccan hills has proved impracticable and consequently areas in Sholapur and Ahmednagar districts have been given up. At present, not more than fifty-four per cent. of the fourteen thousand square miles can be regarded as commercial forests yielding timber for trade. Of the remainder, thirty-five per cent. yields small timber, fuel, etc., for local supplies and eleven per cent. are climatic forests, inaccessible hill tops along the Western Ghats and evergreen forests mainly useful for regulating the water supply for the fields and villages in the valleys below.

With so small proportion of commercial forests compared to the population and cultivated areas there is no timber available for export and foreign and coastal imports are heavy. The value of these imports amounts to about two crores a year. There are however still considerable areas in Kanara and the Surat *Dangs* capable of yielding much commercial timber as soon as roads and light railways are more fully developed.

One of the great advantages of forests to a country is the provision of work to the local inhabitants at almost any time of the year. The present expenditure

by the Forest Department and its contractors, of over half a crore annually in wages must be a great help, to villagers in the poor agricultural areas of the forest districts. People can come on to forest works when there is no work in their fields.

Practically all forest districts are short of labour and development of forest areas helps to mitigate distress in years of scarcity. The quantity of material exploited is gradually increasing and expenditure in wages for works in the forests will no doubt double in future. The circulation of this money gives the people an opportunity of improving their cultivations and increasing food supply.

By regulating the grazing in forest areas the Forest Department not only improves the forest growth but also keeps up the supply of fodder for the local cattle in ordinary years and is able to lay in a considerable store against years of scarcity of fodder. The average annual expenditure on famine fodder storage is about two lakhs of rupees and the cutting and collection of the grass provides easy labour for women and children as well as the men.

In the coastal districts with heavy rainfall much soil is washed away annually and supply of *tahal* and leaf manure from the forests keeps the fields productive.

The ultimate result of the conservation and *reboisement* operations must be an increase of fuel supply already very short which will render available for manure the cattle droppings now used for fuel.

In places the growth of trees on the sloping sides of hills must check the damage done by the abnormally heavy falls of rain.

The following statement shows the classification of the forests in the three circles of the Presidency :—

Division.	In charge of the Forest Department.					In charge of the Revenue Department.				Total Forest Area.
	Reserved Forest.			Protected Forest.		Reserved Forest.			Protected Forest	
	Forest proper.	Pasture reserves.	Fuel and fodder reserves.	Forest proper.	Pasture reserves.	Forest proper.	Pasture reserves.	Fuel and fodder reserves.	Pasture reserves.	
	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.
Northern Circle ..	2,912	..	5	338	..	..	72	31	475	3,833
Central Circle ..	3,616	..	135	12	..	..	1,548	6	72	5,389
Southern Circle ..	3,416	736	101	..	76	15	..	161	112	4,617
Total ..	9,944	736	241	350	76	15	1,620	198	659	13,839

Industrial Development. There has been an appreciable development of industries in the Bombay Presidency during the last two decades and it may be worth while to consider the probable relief that will be afforded by the various industrial centres to agricultural and other labourers in times of famine.

The industrial areas of the Presidency in the commonly accepted interpretation of the term 'industrial' are confined to a few places, such as Bombay, Ahmedabad, Sholapur, Hubli and Karachi. Here there are organised industries on an extensive scale. In addition, there are smaller factories and works in various other parts of the Bombay Presidency, but the main bulk of the Presidency is still untouched by industrial development. The number of factories now stands at 2,439. Of these 818 factories are in connection with the textile trade. In Bombay, the main industry is of course that of the cotton mills where over one and a half lakhs of operatives are now employed in eighty-five mills. In addition, there are large engineering works, a number of printing works, flour mills, etc. Ahmedabad and Sholapur are also extensive textile centres employing about fifty-five thousand and seventeen thousand operatives, respectively. Minor industries are leather working and oil pressing, paint factories, match factories, but few of these are at present working successfully on a commercial scale.

Industries of less highly organised nature are the ginning factories which are scattered over all the cotton producing districts and which work only during the cotton season, mostly with local and more or less casual labour. The main industry, apart from the common village artisan's work, is that of handloom weaving on which it is estimated that some eight lakhs of persons are dependent for livelihood. The hand-loom weaving industry is carried on in many centres in the Bombay Presidency such as Poona, Malegaon, Dhulia, Bhiwandi, very largely by weavers from the United Provinces. It is a hereditary craft and is organised on a large scale for home workers. During the past ten years the condition of the industry has very much improved. The introduction of the flyshuttle loom which increases the worker's output some forty per cent. and the demand for Indian made goods during the latter part of the war and thereafter has immensely improved the financial position and status of the weaver.

Of these industries, weaving cannot be looked upon as a resource for the agriculturist in the time of famine. It needs a certain amount of capital to start with and considerable acquired skill for profitable working. Presumably, ginning factories in time of famine would also suffer from depression. Of the more organised industries, iron works, etc., need skilled labour which the agriculturist is not in a position to supply. The textile mills, however, would probably be in a position to absorb a good deal of unskilled labour but now-a-days the large part of the labour in textile factories is at least semi-skilled. Though the worker may be an agriculturist by up-bringing and tradition and though he habitually spends part of each year in his native village, yet a large number have spent years in working for a large part of the year in Bombay mills and have acquired considerable skill. But presumably the famine conditions would reduce the demand for mill cloth and thereby the demand for labour in mills.

A more promising line of famine relief would probably be found in the enormous works which are now being carried on in and around Bombay by the Development Department and in the future work to be done on the Sukkur Barrage in Sind. Here there is room for absorption of a very large quantity of unskilled labour and probably in the event of famine an abundant supply of available labour. The programme could be expedited to provide for more labour than is at present required, but such can hardly come under the head of " Industry ".

Agricultural Department. There has been considerable development in the Agricultural Department. A number of experimental farms and stations have been established at suitable places all over the Presidency. These stations are the main centres for the spread of the activities of the Department. The work done at them consists generally in the selection of varieties of crops suitable for different localities, selection of seeds, hybridization of different varieties so as to obtain a strain of a superior quality, and experiments with different kinds of manures and demonstration of improved agricultural implements and methods of all kinds. The most important work so far done is in connection with cotton and sugarcane, two of the most valuable crops of the Presidency. Another direction in which the cultivator has been benefited is the introduction of foreign high class seeds for commercial crops like wheat, groundnuts, potatoes, etc., and their popularity is proved by the continuously increasing demand from agriculturists. Improvement of crops like rice, wheat, etc., by the development of types which have greater productivity and vigour, increased drought resistance, immunity from disease, etc. ; improvements in cultivation such as dry-farming or making the best with the least possible moisture ; finding out cheap yet effective remedies for checking pests and blights are some of the other activities of the Department considerably benefitting the cultivator. Besides its work in connection with the growing of crops the Department attends to such allied branches as agricultural engineering, animal breeding, horticulture, soil physics, etc., etc. The work of the Agricultural Engineer in well-boring is appreciated and the services of the boring staff are greatly in demand by the public. The Agricultural Engineer's advice is also being freely sought in the matter of selection of machinery such as pumping plants, iron ploughs and other agricultural implements, selection of sites for the setting of pumps, etc. A special officer is in charge of the cattle-breeding branch of the Department and is responsible for the distribution of premium bulls and matters connected with the breeding and rearing of cattle and the provision of pure milk. The Agricultural College at Poona, beside being a training centre, also acts as a bureau for answering enquiries from agriculturists concerning the analysis of soils, and manures, suitability of water for irrigation or other purposes, the investigation of plant diseases, insect pests and similar matters.

Co-operative Department. The Agricultural and Co-operative Departments deal with different aspects of the same problem, namely, the improvement of the economic condition of the *rayat*, and Government have emphasized the necessity for a close and intimate connection between the two. On the passing of the Co-operative Societies Act of 1904 an independent officer was appointed as Registrar, but from 1907 to 1919 he was subordinated to the head of the Agricultural Department. In the latter year the two Departments were again separated. Progress in the Co-operative

movement was at first slow and the Registrar aimed at a gradual education of the agricultural and industrial classes of the Bombay Presidency in the co-operative idea and the moral lessons which it implies; but the large increase in the number of societies and Honorary Organisers and the interest taken by the public in the Divisional and Provincial Conferences tend to show that the Co-operative movement has taken a strong hold in the Bombay Presidency. The establishment of the Co-operative Central Bank with the aid of a Government guarantee, and the passing of the Co-operative Act of 1912, which admits of forms of Co-operation other than credit have been of great help in furthering the movement.

The growth of the movement is evidenced in the remarkable increase in the working capital which stood at 435 lakhs at the end of March 1922 as against 32 lakhs a decennium back. The number of Societies and their membership also show a remarkable rise, the former verging on 4,000 and the latter on 3,28,000 in March 1922 as against 368 and 30,000 respectively in March 1912.

The Co-operative movement in this Presidency has now reached a stage when its further growth must depend primarily on non-official effort. With the need of conserving the public revenues as strictly as possible, it would be difficult—even if it were desirable—to add to the official establishment to the extent required for propaganda, organisation and supervision. These are duties which must be mainly undertaken in future by non-official agencies, not merely or even chiefly by the Honorary Organisers who have kindly given their services to the Department, but by them and other gentlemen in increasing number organised in the Central Co-operative Institute and its branches, in Divisional Boards, and Taluka Development Committees and in District Banks and Guaranteeing or Supervising Unions.

B.—PUBLIC WORKS

(1) Irrigation Works. As a result of the conclusions arrived at by the Irrigation Commission of 1901-03, the Bombay Government deputed one of its engineers—Mr. H. F. Beale—to enquire into the possibility of constructing storage works throughout the Deccan and to submit proposals. The final report was published in 1909 and some of the works suggested have already been taken in hand while the remainder will provide ample work for many years to come.

In the Deccan which is particularly liable to failure of rainfall irrigation is very necessary and as many excellent storage sites near the Ghats are available, the largest irrigation works are to be found here.

There are now fourteen First Class Irrigation Works in charge of the Deccan Irrigation Division.

The Deccan may be divided into two areas: (1) the area which consists of a belt of country about twenty miles wide situated immediately to the east of the Western Ghats, in which there is an unfailing supply of rainfall and (2) the area which lies further east and includes, among others, parts of the collectorates of Sholapur, Bijapur, the eastern portion of the Poona district and parts of Ahmednagar district. This latter area receives a very scanty and precarious rainfall and it is estimated that in many parts of this area cultivators can count on good crop in only one year out of every five. In order to protect these areas from famine, the Irrigation Department have constructed a chain of dams in the valleys immediately to the east of the Western Ghats where an unfailing supply of water is guaranteed even in famine years. The water so stored is then usually let out into the bed of the river as demanded for irrigation and may flow down the natural course of the river for twenty to forty miles till a suitable place can be found in easy country whence a good command can be obtained by constructing a pickup weir to arrest the water and to divert it into canals on either bank of the river Investigations have been carried out and a large programme of construction has been arranged. Much progress has been made on this during the last twenty years as will be seen from the following figures :—

Year.	Number of works in operation.	Gross area commanded.	Area irrigated.
		Acres.	Acres.
1903-04	10	638,723	55,611
1922-23	14	1,050,378	230,452

The area protected in 1923 represents three per cent. of the cultivated area of the districts in which these works are situated and about one-third of this area will be irrigated eventually when the schemes mature.

Owing to the construction of these schemes and the guarantee of a perennial supply of water to the areas affected, various industries have come into being, the most important of which is the cultivation of sugarcane and the manufacture of *gul* and sugar, and the total area under sugarcane in the Deccan has more than doubled since 1903.

Among the most important works in the Deccan may be mentioned the Lloyd Dam and the Nira Canals, the Pravara River works and the Godavari Canals and of the older works the Mutha Canals and Lake Fife and the Bhatgar Dam and the Nira Left Bank Canal both of which are to be enlarged and remodelled.

The only important irrigation works in the Southern Division are the Gokak Canal in the Belgaum district and the Dharma Canal in Dharwar.

In the Konkan, there are no irrigation works nor are there any tracts specially in need of their protection, as throughout the division the rainfall is heavy and certain and a year of a failure of rainfall is an unusual occurrence.

In Gujarat, there is also comparatively little protective irrigation, owing to the fact that in normal years there is little demand for it. Moreover, there is a great scarcity of suitable sites for storage reservoirs. The only feasible schemes are small tanks or dams with little storage capacity. Tanks are useful but there is little or no demand for them in years of good rainfall, while in years of scarcity the tanks themselves have very deficient supplies and are thus of little or no use.

Details of Government Protective Irrigation Works in each district are given in the district accounts and tables. For the sake of easy reference however, an abstract table is given below :—

District.	Number of Irrigation works.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23.		
						Kharif.	Rabi.	Total.
	No.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Ahmedabad ..	1	76,744	48,840	27,336	24,000	4,617	5,268	9,885
Kaira	4	15,200	14,990	9,300	9,200	1,884	1,378	3,262
Panch Mahals ..	1	4,500	3,200	2,340	2,300	104	884	988
West Khandesh ..	1	13,117	12,627	12,627	12,627	1,705	712	2,417
East Khandesh ..	3	51,519	44,787	7,115	7,115	1,447	601	2,048
Nasik	4	72,892	64,827	42,223	24,137	12,137	14,106	26,243
Ahmednagar ..	4	476,236	446,023	160,044	148,564	45,255	45,939	91,194
Poona ..	5	412,331	314,981	141,480	141,480	68,874	35,500	104,374
Sholapur ..	5	171,472	146,960	57,071	57,071	5,324	8,255	13,579
Satara ..	6	58,564	54,484	28,423	27,903	8,199	6,128	14,327
Belgaum ..	2	19,355	18,314	18,077	18,044	5,743	2,968	8,711
Bijapur ..	1	5,570	5,417	3,417	750	71	387	458
Dharwar ..	5	23,129	18,556	19,619	16,826	1,267	263	1,530
Kanara ..	1	872	755	755	666	661	..	661
	43	1,401,501	1,194,661	529,827	490,683	157,288	122,389	279,677

(2) Roads and Railways. One main obstacle in the way of mitigating distress during the great famine of 1876-77 was the great difficulty of throwing grain supplies into the affected tracts. This difficulty has now been removed to a great extent by the construction of the Madras and Southern Maratha Railway, which traverses districts very liable to famine and connects them with the south-east branch of the Great Indian Peninsula Railway. The railway (M. S. M.), however, runs rather too near the more protected tracts to give them its full advantage from a famine point of view. The most precarious tracts lie at some distance. If a cross line is ever made either through Athni or Gokak, to join the east and west sections, the railway protection will be greatly increased. The Dhond-Manmad Railway constructed as a relief work during the famine of 1876-77 runs through the Ahmednagar district and has been of great service in time of famine. The Tapti Valley Railway has also been found as another important addition to the railway systems.

The total length of railway open for traffic in the Bombay Presidency is nearly five thousand miles. Surveys for extending railways, including the Bombay-Sind Connection Railway, have also been either completed or in progress.

It is impossible to detail the great progress made in the construction of good roads over the Sahyadri passes to connect the coast with the inland districts, and of metalled roads all over the country. With the extension of railways the construction of feeder roads keeps pace. Besides the expenditure from Imperial and Provincial funds, there is a large burden willingly borne and wisely expended by Local Boards and Municipalities in constructing and maintaining numerous railway and trunk road feeders throughout the Presidency. The burden of

maintenance is very serious, but the result, from a famine point of view, cannot be overestimated.

A new feature of the last two decades is the introduction of motor transport. This has led to expensive improvements in the surfacing of roads so as to make them fit for withstanding the wear and tear due to heavy loads passing rapidly on them now. A good deal of progress is being made in *pakka* roads all over the country and roads joining district head-quarters and important taluka towns or industrial centres are being constructed as funds permit. A scheme for making a through road from Bombay to Ahmedabad is already afoot while, on public grounds as well as for affording easy communication to the labouring classes during the rains, when steamers cease to ply, it is proposed to make a through road from Bombay to Ratnagiri, the latter being an important labour supplying centre to this City. The construction of causeways over the rivers Krishna, Ghataprabha, Malaprabha and others has also greatly added to the communication facilities during recent years.

(3) Wells and other sources of irrigation. In discussing the administrative improvements which bear specially on famine relief, it is important that the incentive should be offered to the fullest degree possible for the expenditure of private capital on land improvement. There is no description of land improvement more certain in its returns or more suitable as a means of protection against fickle rainfall, than the construction of wells and other sources of irrigation. In the tables, the present number of wells, tanks, etc., has been shown. Though the present number of wells is, to a large extent, the result of a special impetus given to well construction in famine years, there is no doubt that year by year the measure of protection is increasing.

C.—STANDING PREPARATIONS AGAINST FAMINE

In view of the change in economic conditions during the last two decades, a revised Famine Relief Code is being compiled directing plans and estimates to be kept ready for specific works to be taken in hand as soon as necessity requires, according to the individual requirements of the different districts of the Presidency.

The detailed arrangements to be provided in the revised Famine Relief Code have not, however, yet been fully decided upon, and hence cannot be described here.

STAPLE FOOD GRAINS

Jowar, bajri, wheat and rice, and the coarse hill-grains of which the chief is *ragi* (*nagli*) form the staple articles of food. The poorer classes, as a rule, eat *jowar* and *bajri* in the inland districts and the coarser millets (*ragi, vari,* etc.) on the coast and ghat areas, while the better classes especially in large towns, eat wheat and rice.

In Gujarat, where the area under *jowar, bajri,* wheat and rice is more equally distributed than elsewhere, the staple grains are more various. *Jowar* is most largely eaten in the south in Surat and Broach and *bajri* in the north in Kaira and Ahmedabad, while in the Panch Mahals their place is taken by maize. Rice (with *tur dal*) is universally used by all classes except the poorest. It is eaten at the mid-day meal, while *jowar* or *bajri* bread is taken at night. In North Gujarat the well-to-do classes prefer *bajri* to wheat, while in the south wheat is more appreciated. Wheat is, however, very extensively eaten even by the poorer classes on special occasions. The coarser grains, *kodra* and *ragi* form very important staples for the poor in Kaira, the Panch Mahals and Surat.

In the Konkan rice on and near the coast, is universally used at both meals even by the majority of the poor. But away from the coast the poorer classes eat only the coarse grains—*ragi, sava, vari,* and *kodra*. The use of wheat, *jowar* and *bajri* which are not largely grown, is very limited.

In the Deccan and Karnatak, rice and *ragi* form the staple food in the western tracts bordering on the Sahyadri range, while *jowar* and *bajri* are universally used in the east or *desh*. It may be remarked, however, that in the *desh* of Dharwar, where *bajri* is little grown, *jowar* alone forms the staple food, while in the east of Nasik *bajri* is for a similar reason very largely used. In the eastern tracts of the other districts *bajri* and *jowar* are equally used. But as *bajri* is here cultivated as a *kharif* and *jowar* as a *rabi* crop it is natural that the use of the former should be more extensive in years in which favourable early rain encourages large *bajri* sowings and that *jowar* should be more largely used in years in which the early rains are deficient and the late rains favourable. In these tracts only the richer classes eat wheat and rice.

FAMINE FOODS AND FODDER

A.—Famine Foods. Some of the more important plants used in seasons of scarcity are noted below. It would appear, however, that the people devour in hard times, whatever more or less tender vegetable substances they come across provided they are not poisonous or very acrid or bitter. It may be remarked here that it is not possible to specify all the plants which are extensively made use of in famine. There are many among them which are used by the poorer classes in ordinary times and some of which are partaken of, though to a very small extent, even by the middle and upper classes. Thus the pods of the *Shevga* (*Moringa pterygosperma*), the blossom of the plantain tree, *Chavli* (*Amaranthus polygamus*), *Tandulja* (*Amaranthus oleraceus*), *Math* (*Amaranthus tristis*), *tondli* (*Coceinia indica*), *Rajgira* (*Amaranthus frumentaceus*), etc., form at times a part of the diet of persons of the middle or upper classes.

Wild Indigo.—The various kinds of wild indigo form a very important set of famine foods. The plants come up in thick beds along river banks and in low-lying moist places. The yield of seed is often very large. The commonest are the following :—

(1) *Godadi,* (*Indigofera cordifolia*).—This plant thrives on light *murum* soil and on lands lying fallow for a long time. It grows during the monsoon and ripens in November. The seeds are white and are pounded and made into bread either alone or with *jowar* and *bajri*. Alone the taste is unpleasant but the mixed bread is not unpalatable. When used alone *godadi* causes swelling of the body but when mixed produces no bad effects.

(2) *Indigofera glandulosa,* known under a variety of names such as *Divali, Ranmetha, Borbada* and *Pahudi*. It has a red seed which is either boiled like rice or made into flour and used for bread.

(3) *Indigofera linifolia* is common on poor grass lands.

Vichka (*Cyanotis axillaris*).—The remarks made under *Godadi* apply to this plant also. *Vichka* is much used in famine times and in the 1896-97 famine was sold in the Sholapur bazar at the rate of about twenty-five pounds per rupee. It does not appear to be a really nutritious seed but it flourishes in time of drought and is a reliable product in times of famine.

Wild rice, Nimar and *Sathi* (*Oryza sativa*).—These are important in the Panch Mahals. *Nimar* is the variety which grows in muddy tank beds. *Sathi* grows in waste, or in rice fields. Both ripen in September and are used as boiled rice. *Sathi* straw is used as a cattle fodder.

Bamboo (*Bambusa arundinacea*).—The seeds *Veluche tandul* (or bamboo rice) which exactly resemble oats in size and appearance are used like rice. The tender shoots are also used in making curries, etc.

Chavli (*Amaranthus polygamus*), *Math* (*Amaranthus tristis*) and *Tandulja* (*Amaranthus oleraceus*).—These are used as vegetables and the seeds of the first two serve as minor pulses. They are used even in ordinary times by the poor and middle classes.

Rajgira (*Amaranthus frumentaceus*).—The plant is used as a vegetable. The grain is used for making bread and cakes and in ordinary times is used even by the upper classes during fasts.

Tondli (*Coceinia indica*).—This creeper is common in hedges during the rains. The fruit is cooked as a vegetable. The ripe fruit is eaten raw.

Tuti or Mulberry (*Morus indica*).—The leaves, which are a favourite food of the silk-worm, are used as vegetables.

Tarvad (*Cassia auriculata*).—The leaves are used as vegetables and seed eaten after roasting.

Torata (*Cassia tora*).—The leaves are mixed with *bajri* or *jowar* flour and made into bread.

Toran (*Zizyplus rungosa*).—The fruit is eaten and the leaves used as vegetables.

Alu (*Caladia, colacasia* and *Arums*).—The tubers are used as curries and they are sometimes boiled like potatoes and taken with salt after the skin has been removed. A little lime juice is added to the wild varieties in order to remove the acrid tastes that they may possess.

Kadu Karanda (*Dioscorea bulbifera*).—The tuber is eaten by the poorer classes after it has been roasted and then steeped in cold water to take away the bitter taste.

Pendhare (*Randia uliginosa*).—The fruit is oval about a couple of inches long and of a yellow colour. The unripe fruit is used in curries.

Kusari (*Jasminum latifolium*).—The seeds are pounded into flour and made into cakes. The fruits ripen in May and June, when they are eagerly sought after, being wholesome.

Ghol and *Chil* (*Portulaca oleracea* and *Portulaca quadrifida*).—These are common weeds both in waste and cultivated grounds. The leaves are boiled, mixed with *bajri* and *jowar* flour and made into bread.

Ranmatki, Mathan or *Matki* (*Phaseolus trilobus*).—The seeds are eaten.

Chamdadi (*Phaseolus trinervius*).—Seeds and leaves are eaten.

Theg or *Bid* (*Cyperus bulbosus*).—The bulbs are dried, powdered and mixed with ordinary flour. This is widely used, even in the Konkan.

Nivdung or Prickly Pear (*Opuntia nigricans*).—The fruits are largely eaten in famine times, the fine downy spines being rubbed off. The joints have been found to be also a valuable famine fodder (see under Famine Fodder).

Among grasses may be mentioned (1) *Samo* (*Panicum colonum*). This is a grass of which the seeds proved a most valuable resource in Gujarat during 1900-1901, when it was especially abundant on account of the great area of land lying fallow. The seeds are used for bread or broth.

(2) *Kasar* grass or *Kaher* (*Coix lachryma-jobi*). This grass is common in swamps.

Among trees, the most important are :—

(1) *Mowhra* (*Bassia latifolia*).—The ripe and unripe fruit are eaten, but the most important product is the flower. The flowers are eaten in all seasons, either raw or cooked, along with parched grain. The tree is most common in the Panch Mahals, Khandesh and the Konkan.

(2) *Kel* or the plantain tree (*Musa paradisaica*).—The unripe fruit, the blossom and the pith are usually eaten cooked as vegetables. The rind of the ripe plantain is also used cooked as curry. The wild varieties of this species known as *Rankel* or *Chavai*, *Kardali*, etc. (*Musa superba*) are also valuable in times of famine.

(3) *Vad* the common banyan tree (*Ficus indica*), (4) *Pimpri* (*Ficus tjiela*), (5) *Umbar* (*Ficus glomerata*).—The fruits are boiled and used with salt. The leaves of the last two are also, though rarely, used as food.

(6) *Chinch* or *Amli* (*Tamarindus indica*).—The seeds are generally eaten roasted by children in ordinary years and boiled in water for sizing country blankets. In times of scarcity or famine like the mango seeds, they are eaten, pounded and mixed with flour. Tamarind leaves which are slightly acid are also eaten in curries.

(7) *Surmad* or *bherle mad* (*Caryota urens*).—The fruit of the tree yields a kind of coarse sago. In the Konkan people generally pound the pith and make gruel of it. During the famine this is made into flour and cakes of it made either alone or mixed with the flour of *ragi* (*Eleusine corocana*).

(8) *Shevga* (*Moringa pterygosperma*).—The leaves, blossoms and pods are eaten cooked as curries and vegetables.

(9) *Pangara* or the Indian Coral tree (*Erythrina indica*).—When boiled the seeds resemble beans and are eaten in famine times.

There is a common practice too of grinding the husks of cereals and mixing them with the flour. Apparently the most that can be said for this practice is that it fills the stomach.

A great many of these famine food plants are undoubtedly more numerous in times of drought than in ordinary seasons, partly because natural conditions help the wild plant to oust the cultivated crops.

B.—Famine Fodder. In times of famine, when the area under cereals and pulses is considerably restricted and when owing to deficient water supply it is next to impossible to raise crops like hot weather *jowar*, maize, lucerne, etc., wild grasses, and twigs and leaves of certain trees form perhaps the only source of fodder supply of cattle. In fact any plants (including grasses) and trees which are not either poisonous or particularly bad in smell or taste are resorted to for obtaining feed for cattle in times of severe famine and as the number of such plants and trees is considerable, only the more important of them are noted below.

It may here be remarked that when there is time or water just enough, every attempt is made to raise a crop of some quick growing variety of *jowar* or maize or some such nutritious fodder, but in famine times water is generally deficient and besides, such crops (*jowar*, maize, etc.) require particular soil and care to grow them profitably. The only plants which can be relied upon therefore, for their fodder supply, are the wild fodder plants which grow almost on any soil, without any particular care and which require but little water for their growth—some of them being very drought resisting,—and the twigs and leaves of certain trees which are to be found in abundance in forests, along road-sides, in yards of houses and farms, and in many other places.

Marvel (*Andropogon annulatus*).—This is one of the best known and most appreciated of the wild fodder grasses of the Bombay Presidency. It is an excellent fodder grass and grown on almost any kind of soil. It is usually either grazed or fed green. It is highly relished by cattle who will sort it out of a mixture and eat it first. As a green fodder it always gives good results in milk production and no undesirable odour is developed in the milk. It makes a hay of good quality and as the stem is solid can be turned into silage. The plant is perennial. The out-turn per acre amounts to about 8,000 to 10,000 lbs. of green fodder with sufficient water. The grass responds to cultivation by producing more foliage. It was found also that stirring the soil after each cutting conserves the soil moisture to such an extent that the plants remained green until the next year. The grass is very nutritious.

Pandhari Kusal (*Andropogon monticola*).—This is a fairly common grass in the Bombay Presidency. It is found both in heavy rainfall tracts and in tracts where rain is scanty. In the natural state it occurs along the boundaries of fields and on the slopes of stony hills. It thrives on black and medium black soils if well drained and also grows well on comparatively poor soils. The grass is perennial. Slight stirring of the soil enables the plant to keep green for a considerable time. The grass has the best feeding value before flowering. The grass is found to give an average annual yield of 8,000 to 10,000 lbs. of green fodder when cultivated with abundant water for three years.

Bhale Kusal or *Kali Kusal* (*Andropogon triticeus*).—This grass is common in arid and semi-arid parts of the Presidency, and has considerable feeding value just before flowering. It can also be turned into silage, if cut early.

Kusali (*Andropogon contortus*).—This grass is perennial and very common all over the Presidency. It possesses a considerable power of drought resistance. It is fairly rich for feeding purposes if cut young. Good hay and silage can be made from this grass, if it is cut early.

Lalgavat, *Tambrut* or *Chimanchara* (*Andropogon pumilis*).—This is a low annual grass found generally in the dry or semi-dry tracts. The plants respond to cultivation and produce more foliage than in the wild condition. Slight stirring of the surface soil preserves the greenness of the grass for a very long time and allows repeated cuttings. Experience has shown that the grass will yield annually about 3,000 to 4,000 lbs. of green fodder per acre with sufficient water for three years continuously. This grass is very nutritious particularly at the flowering stage.

Kund (*Ischaemum pilosum*).—This is a perennial grass flourishing in area of scanty rainfall, and is one of the commonest grasses for hay-making in the districts of Sholapur, Ahmednagar and Bijapur. It gives, however, a very rough hay and it is hence best to feed it green. If properly done, it should give a good silage. The calculated out-turn per acre is about 6,000 lbs. of green fodder. It is easily propagated by seeds or suckers and once sown grows widely.

Sheda or *Pavnya* (*Ischoemum sulcatum*).—This is a common annual grass. It is found to grow well in regions of light rainfall. It makes good fodder in the flowering stage. It is much liked by cattle. The grass can be fed green, grazed, made into hay, or turned into silage.

Gondvel (*Chloris barbata*).—This is a perennial grass, which dries up completely during the hot weather but sends out green stalks and leaves as soon as the monsoon bursts. It is found to grow round about villages where the soil is white and contains a good deal of salts. It will perennate in the most droughty situations, simply getting rid of all its above ground portion and remaining dormant till next monsoon. The cattle eat the grass only in the green condition. It is not suited for hay-making or for silage.

Gonde Gavat (*Chloris virgata*).—This is an annual grass of much the same habit and feeding value as the preceding one and is found almost everywhere.

Jiral, *Anjan*, *Vaghnoru* (Guj) (*Pennisetum cenchroides*).—This is a perennial grass which grows well on light and medium soils. It is one of the grasses which thrive best on sandy soil and can stand exceedingly well the hot weather of Gujarat and Sind. Although a little rough to the touch it is liked by cattle and is an excellent fodder. It can be made into hay or silage.

Poladi gavat (*Apluda varia*).—This is an annual grass common throughout the Presidency, in sheltered bushy places. It is a fair fodder, which cattle relish when the grass is young but for which they do not care when it is mature. Its calculated yield at Poona amounted to 6,000 lbs. to 8,000 lbs. per acre, although in one year when two cuttings were obtained it gave as much as 16,000 lbs.

Bongrut (*Sholapur*), *Bhati* (Gujarat), (*Anthistiria ciliata*).—This is a tall annual grass and common in all parts of the Presidency. It is often found in hilly districts and forms a large part of the wild fodder brought in head-loads to Poona market. It is readily eaten when green but becomes very coarse afterwards. It yields about 6,000 to 7,000 lbs. of green fodder per acre.

Pandharphalli (*Indigofera linifolia*).—This is an herbaceous annual plant of small size with a preference for rather dry localities. It yields about 10,000 lbs. of green fodder of fair quality per acre.

Unhalli, *Surpanakha* (*Tephrosia purpurea*).—A much branched herbaceous perennial 1—2 feet high. It is a fair fodder before flowering but rapidly becomes woody and useless. It yields about 6,000 lbs. of green fodder per acre and can be made into silage.

When owing to the failure of the main crops like the various cereals and pulses, groundnut, sann hemp, *methi* (fenugreek), etc., etc., fodder is very scarce

and when owing to deficient water-supply it is not possible to raise crops like lucerne, potatoes, yams, carrots, etc., and when even the various grasses are not sufficient to meet the needs of the cattle, plants and trees which in ordinary times are not even thought of, are resorted to for supply of fodder. In fact, in years of scarcity anything that will even barely maintain the life of cattle becomes invaluable. For instance, the spear grass (*Andropogon contortus*) from the *mallad* tract which would not even be smelt by the cattle of the tract where wheat is usually grown, had been the chief source of fodder in that tract during the famine of 1918-19, while plants like prickly pear and plantain stems which normally would not be given any thought as a source of fodder, were extensively used, wherever available throughout the Bombay Presidency.

In the list following only such plants and trees as are used in years of scarcity or famine are noted.

Babul (*Acacia arabica*).—The tender shoots, leaves and green pods are much liked by cattle and the tree is greatly valued in regions affected by drought.

Khair (*Acacia catechu* and *Acacia jacquemontii*).—Cattle eat the small branches. The branches are cut and the leaves thrashed out and given as fodder.

Kanda (*Onions*) (*Allium cepa*).—Boiled onions are given with other food to cows and buffaloes in the Nasik district and other parts.

Phanas, Jack-fruit (*Antrocarpus integrifolia*).—The leaves of the jack-fruit trees are considered fattening for cattle and the rind of the ripe fruit is greedily eaten by cattle as the greatest of luxuries.

Mowhra (*Bassia latifolia*).—The leaves, flowers and fruit of this tree are eaten by cattle. The flowers are said to be very fattening.

Tad, Palmyra Palm (*Borassus flabelliformis*).—The shell enclosing the fruit and the yellow pulpy mass around the stones are given to cattle and the food is considered fattening. The green calyx of the unripe fruit is also given to cattle.

Palas (*Butea frondosa*).—Buffaloes are fed and are very fond of the leaves which are said to be more wholesome if given when not quite fresh. Camels and goats will not touch this tree.

Naral, cocoanut palm (*Cocos nucifera*).—In parts of the Konkan, the refuse after the oil has been pressed out, is often given to cattle.

Alu, Egyptian Arum (*Colocasia antiquorum*).—The bulbs are cut in small pieces and boiled and given to cattle either alone or mixed with some other green fodder.

Anjan (*Hardwickia binata*).—Cattle are exceedingly fond of the leaves. In Khandesh the trees were formerly and are still to a great extent pollarded for cattle fodder.

Ambadi (*Hibiscus cannabinus*).—In the Poona district, the seed is sometimes given to cattle.

Dudh-bhopla, Bottle-gourd (*Lagenaria vulgaris*).—In parts of the Presidency the fruit when grown in abundance is chopped up and given to cattle.

Kele, the plantain (*Musa paradisaica*).—Cattle are very fond of the skin of the fruit and the flowers when available. The green stems with the sheaths and core are cut into small slices and fed to cattle. Cattle fed on this in the famine of 1918-19 continued in good health and vigour.

Nivdung, Prickly Pear (*Opuntia dillenii*).—Of late, this has been found to be a reliable fodder in times of scarcity as it is found in abundance almost everywhere and can be made fit for consumption at a comparatively small cost. A decade ago it was extremely doubtful whether Prickly Pear could be used safely and effectively as fodder but experiments conducted at various stations and extending over a number of years have demonstrated clearly that if properly prepared (which can be done cheaply) and mixed with a small percentage of cotton seed, etc., it is not only enough to support life but will enable an animal to regain condition even after it has become very poor from semi-starvation. Very large numbers of cattle were saved by its means in the famines of 1918-19 and 1920-21. Details as to the method of use can always be obtained from the Agricultural Department.

Khajur (*Phoenix dactylifera*).—Cattle are fed on the local dates and the refuse of the distilleries is eagerly eaten by them.

Karanj, Indian Beech (*Pongamia glabra*).—Cattle are said to be fond of the leaves of this tree. It is almost ever-green and being much planted along road-sides is readily available. Grass grows well under its shade.

Shami (*Prosopis spicigera*).—The pods are eaten by cattle. Though not so nutritious as the fresh pods of the *babul* they can be kept good longer.

Rakta Roda (*Tecoma undulata*).—The leaves are greedily eaten by cattle. The tree is recommended for tracts subject to drought.

Beheda (*Terminalia belerica*).—The leaves and fresh fruit are considered to be the best fodder for cattle and are hence given in abundance.

Gul-wel (*Tinosfora cordifolia*).—This twining plant which is common on many trees is greedily eaten by cattle. It is cut into small pieces before feeding.

Kat Bor (*Zizyphus nummutaria*).—Cattle are largely fed on the leaves of this bush in many parts and it is often a most useful stand-by when other sources of fodder fail.

Al (*Morinda tinctoria*).—In parts of North Gujarat, the leaves are given to cattle when grass and forage are scarce.

In addition to the plants and trees noted above, the leaves and tender shoots and twigs of the following trees are also utilised for feeding cattle in times of famine or scarcity. The chief trees so utilised are :—

Aghada (*Achyranthes aspera*) ; *Adulsa* (*Adhatoda Vasica*) ; *Bel* (*Aegle Marmelos*) ; *Kadamb* (*Anthocephalus Cadamba*) ; *Hinganbet* (*Balanites Roxburghii*) ; *Kanchan* (*Bauhinia purpurea*) ; *Apta* (*Bauhinia racemosa*) ; *Mandar* (*Bauhinia variegata*) ; *Punarnava* (*Bœrhaavia repanda*) ; *Shevri* (*Bombax malabaricum*) ; Semal or cotton-tree ; *Guggul* (*Boswellia serrata*) ; *Charoli* (*Buchanania latifolia*) ; *Rui* (*Calotropis gigantea*) ; *Bhava* (*Cassia fistula*) ; *Kangoni* (*Celastrus paniculata*) ; *Kadu Kakdi* (*Citrullus Colocynthis*) ; *Bhokar* (*Cordia Myxa*) ; *Gondani* (*Cordia Rothii*) ; *Sissoo*, Shisham tree. (*Dalbergia latifolia*) ; *Tembhurni* (*Diospyros embriopteris*) ; *Pangara* (*Erytherina indica*) ; *Jambhul* (*Eugenia Jambolana*) ; *Kavath*, wood-apple (*Feronia elephantum*) ; *Vad* (*Ficus Bengalinsis*) ; *Umbar* (*Ficus glomerata*) ; *Jangli Anjir*, wild fig (*Ficus hispida*) ; *Pimpri* (*Ficus infactoria*) ; *Pimpal*, the pippul tree (*Ficus religiosea ; Ashta* (*Ficus Rumphii*) ; *Bavchi* (*Flacourtia Ramontchi*) ; *Shivni* (*Gmelina arborea*) ; *Murudsheng* (*Helicteres Isora*) ; *Amba*, Mango-tree (*Mangifera indica*) ; *Nimb*, the Neem-tree (*Melia Azadirachta*) ; *Khirni* (*Mimusops hexandra*) ; *Tuti* (*Morus indica*), The Indian Mulberry ; *Parijataka* (*Nyctanthes Arbor-tristis*) ; *Son Champha* (*Ochna squarrosa*) ; *Tulas*, the Basil plant (*Ocimum canum*) ; *Avla* (*Phyllanthus Emblica*) ; *Chinch*, Tamarind (*Pithe colobium dulce*) ; *Shankasur* (*Poinciana elata*) ; *Ghol* (*Portulaca oleracea*) ; *Asan*, Bastard Teak (*Pterocarpus Marsupium*) ; *Ritha* (*Sapindus Mukorossi*), Soap-nut tree ; *Agasta* (*Sesbania grandiflora*) ; *Ral* (*Shorea robusta*) ; *Rohini* (*Soymida febrifuga*) ; *Ran Amba*, Hog Plum (*Spondias Mangifera*) ; *Sag*, Teak (*Tectona grandis*) ; *Arjun* (*Terminalia Arjuna*) ; *Hirda*, Myrabolan tree (*Terminalia Chebula*) ; *Ain* (*Terminalia tomentosa*) ; *Ran Bhendi* (*Thespesia Lampas*) ; *Gel* (*Vangueria spinosa*) ; *Dhavri* (*Woodfordia floribunda*) ; *Bor* (*Zizyphus Jujuba*) ; *Toran* (*Zizyphus rugosa*) ; *Kate Bor* (*Zizyphus xylopyra*).

CROPS—I.—CEREALS

Jowar. *Andropogon Sorghum.* Varieties.—*Vulgaris* (Great Millet) M. *Jondhala* ; G. *Juar* ; K. *Jola, Kenjola, Yengar, Bilejol. Cernuus* (White *Jowar*) M. *Shalu, Hundi* ; G. *Sundhia* ; *Saccharatus* (*Imphi, Sorgho*) M. *Mothi Jwari, Shalu* ; K. *Sakkarijol. Straw*, M. *Kadba* ; G. *Kadab* ; K. *Kanki*—Area in 1922-23—8,236,915 acres.

Jowar is the most important cereal and at the same time the largest and most widely grown crop of the Bombay Presidency. As a food crop it is better than rice as the grain contains more proteids while it also has more starch than wheat. The grain is chiefly eaten as a bread stuff in unleavened cakes. Particularly in the eastern districts, it almost entirely replaces rice and wheat and is a quite indispensable food. *Jowar* is equally important as a fodder crop and it is perhaps no exaggeration to say that of all the plants grown in the world for the production of fodder, it probably stands first in being capable under a great variety of conditions of producing a very large quantity of a palatable fodder in a minimum of time and under fairly dry conditions.

The distribution of the crop is regulated by the amount and distribution of rainfall, but the depth and character of the soil play an equally important part. In the Konkan and *Mallad* tracts where the rainfall is very high, *jowar* has no place at all. In the parts of the Deccan where the soils are shallow, it gives place to *bajri*, while in the Panch Mahals and in part of the Belgaum district maize takes the place of *jowar*. It is essentially a crop of deep and heavier soils, while the best results are obtained in centres with an average rainfall of from twenty-five to forty inches.

Agriculturally speaking three main divisions of the crop may be made : (1) the early sown or *kharif* varieties, red and white, (2) the late sown or *rabi* varieties—all white ; and (3) the irrigated hot-season crop grown for fodder alone.

The early varieties are very important in Khandesh and in Gujarat (except Broach). They are also grown in the Karnatak but less commonly in the Deccan, where early *jowar* is largely replaced by *bajri*. Various pulses, oil-seeds and fibre-plants are generally grown with *kharif jowar*. The best *kharif jowar* is perhaps grown on black soil in rotation with cotton but the crop does particularly

well also on the deep, alluvial soils of Gujarat especially on *besar* land (clay loams). In Gujarat generally it is grown in July but in Surat sowing is usually completed by the end of June. In the Deccan, the seed is sown as soon as the land is sufficiently moistened. The crop matures in four months, but when only grown for fodder it is cut in three or with certain varieties (*e.g., sundhia*) in even less.

Rabi jowar is extensively grown and occupies nearly two-thirds of the total area under the crop. Its success depends upon a deep moisture-retaining soil and sufficient late rainfall. Sholapur, Bijapur and Ahmednagar are the chief centres and together claim about three quarters of the *rabi* area. Poona, Satara and Dharwar also return a large area under *rabi jowar*. The best *rabi* crops of *jowar* are probably grown in Broach on very deep black soil, which gets sodden during the monsoon rainfall and therefore is unsuitable for *kharif jowar*. *Rabi jowar* in Broach is generally sown alone. It is drilled in September or October and is harvested in February or March. *Rabi jowar* in the Deccan and in the Southern Maratha Country has usually subordinate to it safflower (*kardai*) in rows, or linseed either in rows or sprinkled.

The best hot season *jowars* are *hundi* and *kalbondi*. They are sown between November and February and require irrigation. They are generally cut for fodder before they reach maturity and fed at once to the cattle in the hot weather.

If the seed of any variety is sown thickly in good well-manured soil in a favourable season, the stalks will grow tall and thin and produce small heads of grain. When a good market for *kadbi* exists the seed is thickly sown and a large yield of the excellent fodder is obtained.

There are over a hundred varieties of *jowar* in the Bombay Presidency. Among the best known varieties are *Sathi, Perio, Chapti, Sholapuri, Aispuri, Garya, Gudhagi, Bedri, Dagdi, Maldandi, Dukri, Gidgap, Argad, Utavli, Nilwa* and *Sundhia*. Some varieties are specially suitable for the production of fodder. *Sundhia* is probably the best and does particularly well in Gujarat. *Dudhia* is a variety common in Kaira and Baroda. *Nilva* is the best Deccan fodder variety for a monsoon crop. *Utavli* is another good Deccan variety suitable for sowing in August or September. *Hundi* and *Kalbondi* have already been noticed.

Some varieties of *jowar* mature more quickly than others. This is of some importance, as after scarcity or famine, those varieties which produce grain and fodder in the least time will be in greatest demand.

The average yield of *jowar* per acre comes to about 670 lbs. for the dry *jirayat* crop. The average yield of fodder per acre in addition to the grain comes to about 1,700 lbs. and the normal proportion of grain to fodder is about 1 to 2·5.

Bajri. *Pennisetum typhoideum* (Spiked or Bulrush Millet), M. *Bajri, Sajgura ;* G. *Bajri, Bajro ;* K. *Shejji, Chajji. Straw.* M. *Sarmad ;* G. *Kadab,* K. *Kanki.*—Area in 1922-23, 4,018,089 acres.

Bajri stands second in importance as a food crop, occupying over 50 lakhs of acres or about 20 per cent. of the gross cropped area in the Bombay Presidency. It is the staple crop in a large tract and is the chief food of large classes of the people, but it is grown only where it gives better results than *jowar*. It is a light soil millet, while *jowar* is chiefly seen in the heavier soils. The crop does best when the climate is moderately dry and when the monsoon rain comes in light downpours with plenty of sunshine between showers. In the Deccan the tract where *bajri* growing is most intense lies in the western part of the *desh*.

Ahmednagar which claims about 20 per cent. of the total area under *bajri* in the Bombay Presidency, followed by Nasik with nearly 16 per cent. and Poona with about 14 per cent. are the chief centres. Sholapur, Satara, East Khandesh, West Khandesh and Bijapur, each of which grows between seven and eight per cent. of the total area, are also important. In Gujarat the only districts of any importance are Ahmedabad which claims nearly four per cent. and Kaira with three per cent.

There are two varieties of *bajri* grown in Gujarat chiefly on the light *goradu* soil of Kaira and Ahmedabad. These varieties—*deshi and Bhavnagari*—have special characters and are on the whole superior in yield to the variety grown in the Deccan. In the Deccan there is only one type, though *bajri* grown in the Akola taluka of the Ahmednagar district is reputed to be of better quality and to give a higher yield.

Bajri as a nutritious food stands very high, containing about 10 per cent. of proteids and 70 per cent. of starch, and compares very favourably with *jowar* as a food, but its straw makes poor fodder much poorer than *jowar* straw.

Except in parts of Khandesh where it is grown alone, *bajri* is practically always a mixed crop sown with pulse mixtures. The normal average out-turn comes to 400 lbs. of grain per acre. The proportion of grain to straw is generally the same as *jowar*, being about 1 to 2·5.

Rice or Paddy. *Oryza sativa.* In husk (Paddy), G. *Dangar, Bhat ;* M. *Bhat, Sal ;* K. *Bhatta, Nellu ;* Clean rice, G. *Chokha Tandul ;* M. *Tandul ;* K. *Akki ;* Rice-straw, G. *Paral ;* M. *Pendha ;* K. *Bhattad hullu.*—Area in 1922-23, 1,885,602 acres.

Rice which stands third among the food crops of the Bombay Presidency is chiefly confined to the Konkan and the heavy rainfall strip of the Deccan called *mawal* or *mallad* along and close to the Western Ghats. A fairly large area is also found in the districts of Gujarat, Thana, Kolaba, Ratnagiri and Kanara which claim roughly 20, 15, 13 and 10 per cent. of the total area under the crop respectively, stand first and are followed by Dharwar and Belgaum with 9 and 6 per cent. respectively. Except in Broach where the area under the crop is comparatively insignificant, the other districts of Gujarat occupy from about 4 to 5 per cent. each of the total area. Rice is hardly grown at all in the east Deccan and Karnatak.

In the Konkan districts, in Gujarat and in the heavy rainfall tract near the Sahyadris, rice is generally transplanted. On the other hand, in the salt rice lands of the coast and in the uplands in parts of Ratnagiri and Kanara, broadcast sowing is practised. In the eastern part of the *mallad* tract, in parts of Broach and the Panch Mahals and on the Deccan canals, rice is generally sown with a drill.

In the Konkan districts except Kanara, and in the *mallad* tracts, seedlings for transplanted rice are grown in a specially treated seed-bed. The treatment of the land is called '*rab*'. It consists in heating the surface soil of the seed-bed by burning materials like dried cattle-dung, leafy loppings of trees, grass, etc., on the surface. This system of preparing the seed-bed of rice is almost peculiar to the Bombay Presidency and has been proved to be very effective. In Gujarat and Kanara the rice seedlings are grown in a seed-bed manured with ordinary farm-manure.

For the *Vaingan* or hot weather rice, the field is kept flooded for a time to kill weeds. The water is then drained off. Manure is applied and the seed sown in December. It is watered from time to time and ripens in March. The water is brought from a dammed-up stream or from a well or tank. *Vaingan* rice is chiefly grown in the south Konkan and to a limited extent in the west of Belgaum.

Rice freely responds to manuring. But in the richer trap soils of the north Konkan and the *mallad* tract where transplanting is practised, the crop hardly receives any manure. On the other hand, the crop on the poorer laterite soils of the south Konkan, on areas where drill sowing is resorted to, on the land under river irrigation in the Nasik district, and on that under tanks in Gujarat, is regularly manured.

For successful rice cultivation a good and constant supply of water is essential. This can be best secured by having level plots with proper embankments. In the Konkan and on the Ghats where the general configuration of the land is uneven, this levelling is brought about by a very skilful and elaborate process of terracing according to the contour of the land. This prevents scouring and enables the small plots to hold evenly fair depths of water all over the field.

There are hundreds of varieties of rice. Some are early ripening in from 90 to 120 days and some are late ripening in from 120 to 180 days. Early varieties give generally a coarser grain and occupy uplands which are not capable of retaining very much water. Late varieties give generally finer grain and usually occupy the low-lying fields. Of the early varieties *Varangal, Dodka, Panvel* and *Waksal* are a few of the well-known types. Among late varieties *Kamod, Ambemohar, Raybhog, Kolamba* and *Garvi Patni* may be mentioned. *Ambemohar, Kamod, Jiresal, Pankhali* are a very few of the scented varieties.

As a food crop rice is not equal either to *jowar* or *bajri*, as the grain is starchy and somewhat deficient in proteids. As a fodder crop also it is far inferior to *jowar* both in the quantity and quality of the straw which it yields and as a result the cattle in districts devoted to rice growing are usually very inferior.

The average out-turn of rice per acre comes to about 1,200 lbs. of grain and 1,600 lbs. of straw which means a proportion of grain to straw of about 1 to 1·25.

Wheat. *Triticum sativum.* M. *Gahu ;* G. *Gahu ;* K *Godhi. Var : Spelta,* M. *Jod, Khapla ;* G. *Popatia ;* K. *Khapli godhi ;* T. *Philosum. Var : Bakshi ; Kalikusal.* Straw, M. *Bhus ;* G. *Bhusa ;* K. *Hottu.*—Area in 1922-23, 1,526,344 acres.

Wheat occupies the fourth place among cereals, having over 15 lakhs of acres or about 6 per cent. of the gross cropped area to its credit. Among the chief wheat producing districts Nasik and Dharwar, which claim each about 17 per cent. of the total area under the crop, stand first, and are followed by Ahmedabad and West Khandesh, with roughly 10 per cent. to the credit of each, and Ahmednagar and Belgaum with 8 and 6 per cent. respectively.

Wheat is always and entirely a *rabi* weather crop and the area under it varies with the season, extending in years of favourable late rains. As a dry crop it grows best on deep black soil such as is found along the Tapti in Khandesh and along the Godavari and in the plains of Kopargaon in Ahmednagar. When the crop is irrigated lighter soil is more suitable with a substratum of *murum* two or three feet from the surface to ensure good drainage. The irrigated wheat of the Deccan is grown on this kind of land. In Gujarat irrigated wheat is taken on the light alluvial loams. Irrigated wheat is grown alone and rotated with ordinary garden crops. Dry crop wheat is sometimes sown alone and sometimes mixed with safflower, linseed or gram. Generally dry wheat is a rotation crop and is rotated with cotton and *jowar* in the cotton districts and with linseed and gram along the Tapti.

The usual division into hard and soft white wheats and hard and soft red wheats applies to the Bombay wheats. The hard whites have a higher percentage of gluten which gives them a flinty translucent appearance ; the soft whites are starchy and opaque. The spelt variety is classed as a hard red, while the soft red is the garden wheat of Gujarat.

The areas occupied by the different varieties of wheat are as follows :—

Hard white is the dry crop wheat (*hansia*, etc.) of all Gujarat (except certain parts of Ahmedabad), and of the Deccan (*pivla*). It shares with hard red the wheat tracts of Khandesh where it is also grown under irrigation. In the Deccan a very fine variety of hard white (*bakshi*) is grown in the elevated plateau of Parner taluka as a dry crop, and it is well known all over the Deccan and Bombay Karnatak as the best irrigated variety. Its growth is, however, limited by its great liability to rust and the result is that spelt which is practically rust-proof is by far the most common of the irrigated wheats of the Deccan and Karnatak.

Hard red wheat is the dry crop wheat of the Bombay Karnatak where dry white wheat is unknown. Spelt, the common irrigated wheat of the Deccan and Karnatak, is classed as a hard red. The hard red wheats of the Karnatak are the best of the kind. Hard red is the largest grown dry variety in Khandesh and a large crop of the southern talukas of Ahmedabad in what is called the *Bhal* country. It is grown under irrigation in some parts of Gujarat, practically the same as those which grow the soft red.

Soft red is only largely grown in Ahmedabad and with irrigation. It is the commonest irrigated wheat of that district and of parts of Broach and Kaira which are close to the southern talukas of Ahmedabad. It is called *Vajia*, *i.e.*, garden wheat.

Soft white wheat is grown as a dry crop in the Mawal taluka of the Poona district and as a garden crop in Bijapur. It may occasionally be seen in parts of the Panch Mahals. Its area in this Presidency is thus exceedingly small. *Daudkhani* is a semi-soft variety found chiefly in the moister tracts of the Presidency.

The normal average out-turn of wheat for the Bombay Presidency comes to about 575 lbs. of grain and about 1,000 lbs. of fodder per acre, though in different tracts it varies considerably being governed by the moisture in the soil during the growing period of the crop as well as on the length of the period available to the crop for making growth.

In recent years very successful efforts have been made to introduce improved wheats (Pusa-4, etc.) into the Panch Mahals and adjoining districts. These have a great future, as they not only give a substantially increased out-turn but have also a higher value in the market.

Wheat straw is a poor fodder, and the straw of spelt wheat is almost inedible. The proportion of grain to straw is generally about 1 to 1·6.

Ragi or Nagli. *Eleusine coracana.*—G. *Bavto, Nagli.* M. *Nagli, Nachni.* K. *Ragi.*—Area in 1922-23, 634,682 acres.

This grain occupies the fifth place among the Bombay cereals. In the Kaira and Ahmedabad districts of Gujarat and in the adjoining territory heavy crops are produced on alluvial soil. Elsewhere in the Presidency the cultivation is chiefly confined to the poorer upland lands of the Ghats and the Konkan. The important centres of cultivation outside the Konkan are Kaira in Gujarat, Nasik, Poona and Satara in the Deccan, and Belgaum and Dharwar in the Karnatak.

Nagli is entirely a rains crop in Bombay and is generally grown in districts of heavy rainfall on land which is too light for rice or too steep to be converted into terraced rice fields. In the fertile alluvial soil of Kaira and other parts of Gujarat it is grown on *besar* (clay loam) soil. It thrives well on such land with a well distributed rainfall of 30 to 35 inches, and even a heavier rainfall suits the crop admirably.

In Gujarat, *Nagli* is sometimes a drilled crop with *kodra tuver* (*tur*) and sesamum, but is generally grown unmixed and from transplanted seedlings. It rarely occupies the same field oftener than once in three or four years and is rotated with *jowar* and its subordinate mixture or with *kodra* mixed with *tur* and sesamum or with such other crops as are ordinarily grown in *besar* alluvial soil. In the uplands of the Konkan and on and under the Ghats in the Deccan and Karnatak, the crop is grown mostly on sloping or steep land. In these hilly tracts the land is allowed to be waste for a number of years, usually from four to ten according to the kind of soil. When broken up for cultivation after fallow, the scrub growth and grass is cut and spread with other available rubbish evenly over the surface and burnt. Then a short rotation of crops is taken, the usual order on good upland *varkas* land being (1st) *Nagli*, (2nd) *Vari*, (3rd) *Kodra*, (4th) *Khursani* (nigerseed). *Nagli* is grown to some extent away from the Ghats on the borders of the Deccan plains, where the rainfall is 40 inches (more or less) and is there rotated with *jowar* or *bajri*, each with subordinate pulse, etc., mixture. *Khursani* is also a common crop in these fields.

A fair average crop in Gujarat will yield 1,300 to 1,500 lbs. of grain per acre ; a really good crop from a fertile liberally managed field, 2,000 lbs. per acre. The out-turn in the uplands of the Konkan is very variable ; so much depends upon season, particularly on regular moderate rainfall at time of transplanting. Numerous crop tests taken with this crop show that the out-turn ranges from 800 lbs. in a moderate season to about 1,500 when the season is very favourable.

Nagli straw is of poor nutritive value as fodder.

Nagli will keep good if stored in underground pits for a very long time.

Vari, Sava and Chino. *Panicum miliaceum* and *Panicum milliare*: M. *Vari, Sava and Chino.*—Area in 1914-15, 251,365 acres.

Vari and *Sava* are hill millets and their cultivation is almost limited to the Konkan and to the Ghat parts of Nasik, Poona, Satara, Belgaum and Dharwar. These millets are entirely a *Kharif* crop depending on the natural rainfall, and are never irrigated. They are grown on similar soils and under like conditions to *Nagli*. Both *Vari* and *Sava* can be grown from transplanted seedlings but the latter crop is more often produced from drilled or broadcasted seed. They are food grains of the poor but also used by the middle and richer classes on fast days.

A full average crop on good *varkas* land will yield from 700 to 750 lbs. grain per acre in each case. The straw is not used for fodder and it has no other economic value except for *rab*.

Chino. Is grown in Gujarat chiefly in garden land as a hot-weather irrigated crop. It is popular because it thrives well and provides excellent fodder at the beginning of the rains when fodder is scarce, but much required by garden work cattle.

Kodra. *Paspalum scrobiculatum* : G. *Kodra, Menga* ; M. *Kodra, Harik* ; K. *Harik.*—Area in 1922-23, 245,911 acres.

Kodra is particularly well adapted for the poorest soils under favourable conditions of climate and rainfall and is hence extensively grown on very poor soils of the Bombay Presidency. At the same time it is a popular and paying crop on the rich alluvial plains of Gujarat.

Gujarat claims the largest area. Elsewhere it is chiefly grown in Ratnagiri, the uplands of the Konkan and the *ghat* parts of the Deccan. It is grown everywhere as a rain crop, entirely dependent upon monsoon rainfall.

In Gujarat, *kodra* is a very important crop in the *goradu* soils of the Kaira district and also in similar alluvial soil in the adjoining territory. If grown alone *kodra* is considered an exhaustive crop, but in Gujarat it is never so grown. The usual mixture is *kodra, tur* and sesame with a sprinkling of *Ambadi, i.e.*, Bombay hemp. This mixture is grown often year after year in the same field without apparent diminution of out-turn or exhaustion of soil, if the fields are manured with fair liberality and properly tilled. In low-lying damp fields in Gujarat, rice and *kodra* are grown and mixed in unembanked land. This mixed crop is called *vagadu*. *Kodra* is sown generally by the middle of June and is ripe for harvest in October. A first class crop of *kodra* with subordinate mixture will yield in *goradu* soil about 1,200 lbs. of *kodra*, 600 lbs. of *tur* and 160 lbs. of sesame.

In the Konkan and Ghat districts *kodra* is the third crop taken after a long fallow, the previous crops being *nagli* and *vari*. *Varkas* land exhausted by the cultivation of these crops is sown with *kodra*. In order to get a good crop of *kodra, varkas* land should be well-ploughed and otherwise well-tilled. Generally no manure is given. The seed is sown broadcast in June or July and the crop is reaped in November.

The grain as well as the straw of *kodra* frequently, if not always, contains a poisonous narcotic principle which causes vomiting and vertigo. For this reason care is taken at least in the Konkan to prevent cattle straying into *kodra* fields. The poisonous principle is probably produced under unfavourable

conditions of climate and season and the grain and straw are only poisonous in particular seasons. It is said, in the case of *kodra*, that the narcotic property is to some extent neutralised by steeping in cowdung and water, or by keeping the grain for a number of years. Though the poisonous and the non-poisonous grain cannot usually be distinguished by ordinary people, yet cultivators in Gujarat claim that the diseased grain can be detected while threshing as then the effect of the poisonous dust is felt both by the threshing bullocks and their driver.

Kodra is generally consumed by poor people of inferior caste.

Maize. *Zea mays :* G. *Makhai ;* M. *Maka ;* K. *Goinjol, Mekhejol.*—Area in 1922-23—208,914 acres.

Maize is chiefly cultivated in the Panch Mahals where it ranks as a staple. Satara, Sholapur and Belgaum grow a good deal, and in the Deccan it is mostly grown for early fodder though the grain is allowed to ripen and the ears are readily sold in towns for roasting. In the Panch Mahals, it is grown either as a rains or as a late irrigated crop. The *kharif* or rains crop is most extensively cultivated and is usually followed by a *rabi* crop of wheat or gram. Maize with a sufficient rainfall does best on the rich brown soils of the Panch Mahals. Rice land retentive of moisture either by position or by depth and density, also suits the crop. It is usually sown alone, as its quick habit of growth does not make it a good companion for subordinate mixtures. Maize gives on an average a yield of 1,200 to 1,500 lbs. of grain.

As a producer of fodder, maize probably stands only second to *jowar* among the crops of the world, and it may even be doubted whether it is not in many cases considerably its superior. It grows rapidly, it requires little water considering the yield of fodder which it gives—which is as much as that given by *jowar*—it can be safely grown over a larger range of country than its rival—the *jowar*, and it can be fed at any stage of its growth far more safely than is the case with *jowar*. Careful experiments have been made in America to see if prussic acid, the poison of young *jowar* fodder, is ever to be found in maize and it has never been detected even in suckers from the maize stalks in the field. Taking all these factors into consideration, it can safely be said that maize is not only an excellent fodder crop in ordinary times but is probably the best emergency fodder crop to grow when the rain fails, as is often the case in the Presidency, and when famine is imminent.

Barley. *Hordeum Vulgare :* G. *Jav ;* M. *Satu, Jav ;* K. *Javegodhi.*—Area in 1922-23—26,102 acres.

Barley is not extensively grown in the Bombay Presidency. The principal barley cultivation is seen in North Gujarat, Sholapur, Satara, Belgaum and Bijapur. In the Bombay Presidency barley is grown as *rabi* irrigated crop and, like irrigated wheat, is often a second crop in garden land and takes its place in rotation among the numerous garden crops grown. Barley is generally grown alone. Occasionally there is a sprinkling of rape or mustard. In parts of Gujarat, wheat and barley are grown mixed. Barley is essentially a light land crop. The sandy loams of Kaira and Ahmedabad are particularly suitable. Barley is sown usually in November. If it is not a second crop it is sown a month earlier. The crop matures in about four months. The crop is harvested, threshed and prepared for market in the same way as wheat. Bombay barley is extensively used as a horse food.

Barley in Gujarat is practically exempt from disease and probably on this account is grown in preference to wheat, the latter crop being often seriously damaged by rust.

A full average yield of barley amounts to 1,500 to 1,800 lbs. of grain per acre and about a ton of straw. The straw is more nutritious than that of wheat.

Rala or Kang. *Setaria Italica :* G. *Kang ;* M. *Kang, Rala, Bhadli ;* K. *Navani, Rala.*—Area in 1914-15—247,677 acres.

In the Bombay Presidency, the only important centre of cultivation is the Karnatak, though a substantial area stands to the credit of Satara and Ahmednagar in the Deccan. The Gujarat areas are very small.

It is a quick growing cereal and a suitable crop to grow after a period of famine or scarcity. It produces a good deal of grain and a fair amount of fodder in quick time. It thrives best on medium light soil and does better than other millets with deficient rainfall. The crop is sown usually in July-August without any subordinate mixture, in an unmanured field. It ripens in about three months. The average yield per acre comes to about 800 lbs. of grain and nearly a ton of straw. The straw makes good fodder.

Banti. *Panicum crusgalli, Var. frumentaccum :* G. *Banti, Gajro ;* M. *Banti, Barti.*—Area in 1914-15—47,028 acres.

The chief centres of cultivation are Ahmedabad and the Panch Mahals in Gujarat. Elsewhere in the Presidency the cultivation is trifling. Throughout the Deccan on light land with a fair rainfall it is widely grown in little patches, often as a border with other crops. The land is prepared as for *bajri*. The seed is drilled, usually alone in June-July. The plants can be readily transplanted in showery weather. A border or patch in a field is often grown from seedlings transplanted like *nagli* or *vari*. The crop ripens in September-October. It is usually grown in the Deccan on poor, light upland soil in parts where the rainfall is moderately heavy, and on such land a yield of 400 to 500 lbs. of grain and 1,500 lbs. of straw is a full average crop.

Bhadli. *Setaria glauca.* Area in 1914-15—14,696 acres.

Bhadli is sparingly cultivated in hilly parts of the Deccan on comparatively light soil with moderate rainfall. It is a rains crop sown in June-July and reaped in October-November. The seed is small and requires careful sowing. The seedlings are also small and delicate when young, but when once they begin to tiller a dense growth soon covers the ground. The crops need no further attention till harvest time.

A good crop stands about two feet high. The plants, as already stated, have enormous tillering power and the quality of fodder is also good. The crop is, therefore, more valuable as a fodder crop and as such, in parts at least, it has a future.

Oats. *Avena sativa.* This is hardly an indigenous crop. In Bombay the crop is of minor importance. It is grown for its grain and fodder near some cantonments by cavalry officers and for race horses, chiefly in Poona, Ahmednagar, Satara and Ahmedabad, and also to a less extent in other districts.

This cereal is only grown in the *rabi* season and in this Presidency always under irrigation. Oats grow best on well-drained, friable soils of fair depth. Very light sand and dense clay are not suitable. The crop is generally grown alone in the Bombay Presidency, except in North Gujarat where rape is sown as a subordinate mixture. Oats are grown on the same kinds of soil and under the same conditions as irrigated wheat or barley. The seed is usually broadcasted like barley. The crop comes to maturity in 3½ to 4 months. A fair outturn from an irrigated crop on good soil is 1,800 to 2,200 lbs. grain and 25 cwts. straw per acre. Indian oats are used almost entirely as food for horses.

The crop is grown at remount and horse-rearing depôts in India not so much for the grain as the fodder. The crop has a special position as an excellent fodder crop. (See under Fodder Crops.)

II.—PULSES

Tur, Pigeon Pea. *Cajanus indicus :* G. *Tuver ;* M. *Tur, Turi ;* K. *Togari.*—Area in 1922-23—393,826 acres.

In the Bombay Presidency there are two varieties of *Tur* (1) a variety with white seed grown mostly in Gujarat ; (2) a variety with red or light brown seed grown to a slight extent in Gujarat and in general cultivation throughout other parts of the Presidency.

The extent and habit of growth of *tur* varies greatly on different soils and in different seasons. In rich deep soil in a favourable season *tur* often grows to a considerable height, six feet or more in Gujarat. In the Bombay Presidency it is almost always grown subordinate to or mixed with other crops. Its period of growth is much longer than that of the other crops with which it is grown. The crop resists drought in a remarkable degree and in deep soil continues to thrive right through the *rabi* season though sown usually in June. It litters the surface soil with a heavy top dressing of fallen leaves as it ripens, and like other leguminous plants adds to the soil's stock of nitrogen. *Tur* is a favourite crop with cultivators, and there is good reason that it should be so, for it stands in the forefront among pulses as a restorative rotation crop. *Tur* is extensively grown throughout the Presidency except in the Konkan where the crop is not of much importance. All the Deccan districts grow *tur* to an appreciable extent. Ahmednagar and Sholapur grow most, Poona least. All three districts of the Karnatak have extensive areas. In Gujarat, almost every *jowar* field in Surat has subordinate *tur*. In many *jowar*, *bajri* and *kodra* fields, in Ahmedabad and Kaira especially, there is a decided sprinkling. The Broach crop is mostly *rabi*, *tur* and sesame being a common mixed crop in that district, sown about September. Sesamum and *tur*, and rice and *tur* are also common mixed crops in Broach and Surat, the latter mixed crop being grown on unembanked fields.

Tur is generally sown in June-July and is ripe for harvest in February-March. Its green pods are used as a vegetable and ripe pulse is split and eaten in a variety of ways. The outer husk of the seed with part of the kernel sold under the name of *chuni* is a favourite food for milk cattle. The leaves and pod shells are a valuable addition to innutritious fodder. The stalks are used in various ways—for making baskets, for wattling the sides of carts, and when well grown furnish excellent charcoal.

It is difficult to estimate what an average yield of *tur* really amounts to. 100 to 150 lbs. per acre would be considered a good yield from medium black soil in

the Deccan from a crop occupying every fourth row in a *bajri* or *jowar* field. In the Charotar villages of Kaira a good yield of *tur* in a mixed crop often amounts from 800 to 1,000 lbs. per acre. Experience has also proved that *tur* can be safely grown alone on good deep alluvial soil and when thus cultivated, is profitable. It has yielded about 2,000 lbs. per acre at Nadiad where it was so grown for a number of years.

Though cold nights and cloudy weather may do some harm *tur* is usually grown without much risk of damage by disease or other mishap, though the death of large number of plants from wilt, and attack by the *tur* pod caterpillar when the pods are formed, are not uncommon. No practical method is known of dealing with these attacks.

Gram, Chick Pea. *Cicer arietinum :* G. *Chana ;* M. *Harbhara, Chana ;* K. *Kadle.*—Area in 1922-23—586,043 acres.

Gram is grown all over the Presidency, except in the Southern Konkan, as a cold weather crop. The Panch Mahals grow the largest area in Gujarat but the crop is also important in Ahmedabad and Kaira. In the Deccan, Ahmednagar is the most important district. The crop is extensively grown in all the districts of the Karnatak.

Gram in the Presidency is always a *rabi* crop. It is grown in three ways—(*a*) as a dry crop in deep black soil when usually it is the sole crop of the year ; (*b*) as a dry second crop usually after rice in rice-beds but occasionally, as in the Panch Mahals, on ordinary dry crop land after a *kharif* crop of maize ; (*c*) as an irrigated crop liberally manured and regularly watered.

Dry crop gram does best on deep retentive black soil; such as the wheat lands along the Tapti in Khandesh and the Godavari in Ahmednagar. The crop is generally sown in October and ripens in February. 500 to 600 lbs. per acre may be considered a fair average yield under ordinary cultivation.

As a second dry crop either after rice or other *kharif* crop, it is mostly cultivated in Gujarat. The crop does well on alluvial soil of rice beds when such are clay loams. These are naturally fairly retentive of moisture and on account of their favourable position usually hold sufficient moisture to mature the crop properly even if the rainfall after sowing is trivial in amount as it generally is. The crop is sown as soon as the first *kharif* crop is removed and if the soil holds sufficient moisture the crop thrives well till harvest without any particular attention.

For the irrigated crop, which is principally grown in the Deccan, the field is properly manured, well tilled and made fairly level to facilitate irrigation of all the crop. If, however, the soil is sufficiently moist in October when sowing is done, the crop hardly requires more than two or three waterings. The out-turn, of course, varies with the quality of land and the facilities for irrigation but it generally comes to about twelve hundred lbs. per acre.

The gram plant is useful in a variety of ways. It is used green as a vegetable—both foliage and grain. The foliage is often sun-dried and stored, and used, as required, as a green vegetable. The ripe grain is used for *dal* or is eaten parched or made into sweet-meats. It is also the commonest food of horses and is an excellent food for fattening sheep. A useful bye-product is occasionally secured from the leaves of the growing plant termed *amb*. This is the acid excretion of the leaves (consisting almost entirely of malic and with a little oxalic acid) and is collected by spreading a wet cloth over the foliage and wringing out the absorbed substance—the *amb*.

Besides this the crop is valuable in one more way. Gram is everywhere recognised as valuable rotation crop, either on dry crop land or under irrigation. It is restorative like other leguminose crops. A good crop is dense and shades the ground and therefore suppresses weeds. On dry crop black soil it may be called a fallow crop, in that in the rotation it takes the place which would otherwise be bare fallow. It is thus often only indirectly remunerative, but even when the cost of cultivation exceeds the value of the harvested crop it leaves the land clean and enriched, and the succeeding crop is benefitted to a considerable extent.

There are four varieties of gram which differ obviously in the colour of the seed : (1) black, (2) red, (3) yellow, (4) white. The three first are generally grown indiscriminately together. The yellow gram, however, if true to variety, commands a higher price than the mixed. White gram is grown on a small scale in the Ahmednagar district.

The chief pest of gram is the Gram pod caterpillar, which bites through the green pods and attacks the seeds. It often almost ruins the crop, but no remedy for it is known.

Kulthi, Horse-Gram. *Dolichos uniflorus* and *Dolichos biflorus :* G. *Kulthi ;* M. *Kulith, Hulga ;* K. *Huruli.*—Area in 1914-15—665,721 acres.

Kulthi takes the third place among the pulses of the Bombay Presidency and occupies over five lakhs of acres annually. In Gujarat, Ahmedabad grows a small area. The cultivation is very important in the Deccan, particularly in the Khandesh, Nasik, Ahmednagar and Satara districts. In the Karnatak, Belgaum and Dharwar each grow over 50,000 acres annually and Bijapur about 20,000 acres. In the Konkan the pulse is only important in Ratnagiri.

The principal cultivation of *Kulthi* in the Bombay Presidency is in the *kharif* season as a row or mixed crop subordinate to *bajri*. It is occasionally grown in the *rabi* season as a second crop in rice fields and sometimes alone or with rows of niger-seed as a *kharif* crop. *Kulthi* is essentially a light soil crop and is extensively grown on the light red stony soils of the Deccan. It does well also on poor sandy soils. It only requires a moderate rainfall and succeeds better than any other pulse in light soil which is in poor condition. The mixed crop is sown in July and is ripe about the end of October. A common seed rate per acre for the mixed crop in light or medium light soil is six to eight pounds of *bajri*, one pound of *ambadi* (Bombay hemp) one and a half to two pounds of *kulthi* and a half a pound of niger-seed. A good out-turn per acre of *kulthi* from the above seed rate would be 70 to 80 lbs. pulse.

The *bhusa* or chaff obtained from *kulthi* when threshed under the feet of bullocks, is of very fine quality and if the fodder is cut when the plant is in flower, it is excellent for all farm animals. The pulse when boiled is also used to a considerable extent as food for farm animals. *Kulthi* is extensively used as a pulse for human food in the Bombay Presidency.

Math, Kidney Bean. *Phaseolus aconitifolius :* G. *Math ;* M. *Math, Matki ;* K. *Madki.*—Area in 1914-15—401,206 acres.

This pulse is fourth in importance in the Bombay Presidency. The annual area is from three to four lakhs of acres but varies to a considerable extent with the character of the season. *Math* is grown to a considerable extent in all districts except the Konkan. The Deccan produces most, then Gujarat. The most important districts are Ahmedabad and Kaira in Gujarat, Khandesh, Ahmednagar, Poona, Sholapur and Satara in the Deccan, and Dharwar in the Karnatak.

Math is only grown as a rains crop. It is rarely, if ever, sown alone. It is a common subordinate crop with *bajri*. *Math* like *kulthi* is essentially a light soil crop and gives its best outturn on the deep alluvium sands or sandy loams of the Ahmedabad and Kaira districts. In the Deccan districts it is sown mostly on light, stony, more or less upland soil, and on such land does not yield nearly so well as in the fertile plains of Northern Gujarat. It manages to thrive, however, fairly well in soil which is in poor condition. Heavy rain is very harmful to this pulse. It does best with a well-distributed rainfall of about thirty inches.

Math is usually sown in June-July and reaped in November-December. A fair yield in an average season would be 120 pounds pulse per acre, from the mixed crop, where the seed used is 7½ pounds. *Math* is used as a split pulse and green vegetable and the bye-products are employed as cattle fodder.

Mug, Green Gram. *Phaseolus mungo :* G. *Mag ;* M. *Mug ;* K. *Hesaru.*—Area in 1914-15—245,509 acres.

Mug, Green Gram, is often one of the pulses sown in *jowar* and other fields. It is grown more in Dharwar and Bijapur than in other districts. The other more important centres of cultivation are Ahmedabad, Khandesh, Ahmednagar, Satara and Belgaum.

In Dharwar, Kolaba and Kanara, *mug* is grown in the *rabi* season as a second crop after rice. Its chief cultivation is, however, in the *kharif* season. As a *rabi* crop it is grown alone. As a rains crop it is grown subordinate to *jowar* and other cereals. *Mug* does best on deep good soil of fairly heavy character, such as the *besur* soils of Gujarat or ordinary black soil. Soils which are suitable for *jowar* are also suitable for *mug*. The plant does best with a well-distributed rainfall of about 30 to 35 inches. Heavy down-pours of rain are very disastrous to this pulse particularly at flowering time.

Mug is either allowed to grow to maturity or the pods are plucked and used as a green vegetable and the fodder afterwards cut green. From a seed-rate of 1½ to 2 lbs. per acre, the outturn of *mug* in a mixed crop comes to about 150 to 200 lbs. pulse per acre, in a favourable season. The crop is particularly liable to be attacked and damaged by caterpillars, but so far no practicable remedy or preventive measure is known.

Mug is considered one of the best pulses for split *dal* for human consumption and in times of scarcity and famine, it is often pounded and made into bread.

Udid, Black Gram. *Phaseolus radiatus :* G. *Adad ;* M. *Udid ;* K. *Uddu.*—Area in 1914-15—278,776 acres.

This is mostly grown as a subordinate crop with *jowar* and other cereals. *Udid* is a very important pulse in the black soils of Khandesh. It is also grown fairly extensively in Nasik, Satara, Belgaum, Thana and Ahmedabad. In other districts it is of minor importance.

Like *mug* it is also taken as an early catch crop in lands intended for a *rabi* crop. In the Konkan it is sometimes sown broadcast in the standing rice crop but generally like other pulses follows rice after the rice has been harvested. In the Karnatak it is sown in both the *kharif* and *rabi* seasons. *Udid dal* is considered superior to all other split pulses. It is parched and ground and is the principal ingredient in the thin wafer biscuits, called *papads*. The use of the pods as a green vegetable and of the leaves and stems as fodder is universal.

Val, Spiked or Large Fruited Dolichos, the Indian Bean, *Dolichos lablab*. G. *Val*. M. *Val, Pavta*. K. *Avare*.—Area in 1914-15—93,548 acres.

The most important centres of *val* cultivation are the Surat district, the three Collectorates of the Karnatak, Ratnagiri and Kolaba. The crop is also grown to a limited extent in all the other districts of the Presidency.

The principal crop is the *rabi* crop and it usually is a second crop in rice fields. The most suitable soil for this (*rabi*) crop is black soil or at least clay soil, very retentive of moisture and situated in a low lying damp situation. *Val* is also sown in ordinary dry crop fields either alone or with the castor oil plant. In the *bhatha* (riverside) alluvial land of the Tapti, *val*, castor and *tur* are very common subordinate crops to *jowar*. The soil is of a deep silt and *val* does not suffer in ordinary seasons from any lack of moisture. In highly assessed garden lands *val* is sometimes taken as a catch crop when the opportunity occurs. It is sown as speedily as possible after the previous crop is removed and if this is done the natural moisture in the soil is generally sufficient to bring the *val* to maturity. A crop grown in this way has a restorative effect on garden land, and as the crop shades the ground, weeds are suppressed.

A very good crop of *val* after rise will yield 1,300 pounds of pulse and an equal weight of fodder per acre. The average however is about 700 pounds. *Val* is a delicate crop in many ways. It is peculiarly liable to attack by insects especially caterpillars which attack the foliage. Other species attack the pods and destroy the seeds. The crop is also damaged by cloudy weather, cold and frost. *Val* matures in about three to four months but goes on bearing for two months longer. The green pods are used as vegetables, while the seed is used as split pulse. The fodder is supposed to be very good for milch cattle. It is more succulent than that of many other pulses.

Lang, Chickling Vetch. *Lathyrus sativus*. G. *Lang*. M. *Lakh*.—Area in 1914-15—48,368 acres.

Lang, Chickling Vetch, is almost wholly confined to Broach. Nasik and Surat have also a small area under it but in the other districts the areas cultivated are very trifling. It is almost invariably grown alone and thrives best on deep, retentive, black soil. In the Deccan it is chiefly a second crop in rice fields, whereas in Gujarat it is generally the sole crop of its year, although occasionally, like *val*, it is grown as a second crop in rice beds. In Broach in wet seasons, fields which become water-logged and too wet for cotton in the *kharif* season are sown with *lang*. A good crop of *lang* forms a thick close mass over the whole surface and smothers such weeds as attempt to grow and, when reaped, leaves the surface as clean as that of a fallow field. The crop is sown in September or early in October and ripens in February. A full average crop yields about 1,000 pounds of pulse and 1,300 pounds of fodder.

The pulse which is generally used split, is inferior, and is usually consumed by the poorer classes. The fodder, however, is highly nutritive and is reserved specially as food for work cattle at busy seasons.

Chavli, Chinese Bean. Small Fruited Bean, *Vigna catiang*. G. *Chola*. M. *Chavli*. K. *Alsandi*.—Area in 1914-15—93,548 acres.

The cultivation of the pulse is not extensive. The total area rarely exceeds 30,000 acres, annually. It is grown to the greatest extent in the Kaira, Khandesh, Belgaum, Bijapur and Thana districts.

Chavli does not yield so well as *mug*, *udid*, and other hardier pulses as a subordinate crop with cereals under unfavourable conditions of rainfall and season. Its cultivation is, in consequence, restricted. It is grown with other pulses subordinate to *bajri* in light alluvial soils in the Kaira District. It does better in moderately light soil than in soil of heavier or denser consistence. It is grown alone in the *kharif* season in garden land to produce a green vegetable—so-called French Beans—and in the *rabi* season is grown, like *mug* and *udid*, to a limited extent as a second crop in rice fields. As a sole crop in the *kharif* season it grows rapidly, soon shades the ground with a thick mass of growth, which, if cut as green fodder, is excellent for cattle especially for milk cows.

Vatana, Field or Green Pea. *Pisum arvense*. G. *Vatana*. M. *Vatana*. K. *Batgadle*.—Area in 1914-15—28,386 acres.

Vatana, Field Peas, has only a small area. It is grown, like lentils, generally alone and always in the *rabi* season without irrigation. It is also grown to a small extent as an after crop in rice fields in the Konkan. As a rule this green pea is a very inferior one. A white variety, considerably superior, is grown in the Junnar and Khed talukas of Poona. In garden cultivation near towns, better kinds of pea are largely cultivated from exotic seed but none of these have the vitality of the common field pea. The indigenous variety is a *rabi* crop; exotic varieties are not confined to any particular season.

Masur, Lentils. *Ervum lens* or *Lens esculenta*. G. M. *Masur*. K. *Channangi*.—Area in 1914-15—13,706 acres.

The crop is only important in Nasik, Belgaum and Poona. *Masur* is grown generally alone and always as an unirrigated *rabi* crop. In the Poona district it is the sole crop of the year and is grown chiefly just under the eastern slopes of the *Ghats*. It is there rotated with dry crop wheat. The seed is drilled in October and the crop ripens in 3 to 4 months. A good outturn in a fair season from the poor *rabi* land in which *masur* is usually grown will not exceed 300 pounds per acre. No other pulse would thrive so well under the same conditions of soil and climate. The amount of fodder obtained per acre is small.

Guvar, Cluster Bean, *Cyamopsis psoraliodes*. G. *Guvar*. M. *Gavar*. K. *Chavlikai*.—Area in 1914-15—21,832 acres.

In the Bombay Presidency this is a crop of very minor importance, except in Gujarat where it is extensively grown. The chief varieties are (1) *Pardeshi*, (2) *Sotia Guvar*, (3) *Deshi*.

(1) *Pardeshi*.—A sprinkling is sown in *Kodra* and other cereal Kharif crops. In the fertile alluvial soil of the Charotar (Kaira) villages the *Pardeshi* variety grows about six feet high. The pods are gathered usually green and used as a vegetable.

(2) *Sotia Guvar*.—This variety grows eight to ten feet high. The pods are used as a vegetable. The crop is extensively grown in the garden lands of Gujarat. It is sown amongst ginger to give shade. When the pods are plucked, the side leaves are stripped off and left on the surface as green manure for the ginger. In the garden lands of Surat it is grown mixed with cucumbers being sown usually in May and irrigated until the rains come. The seeds are yellowish in colour and small.

(3) *Deshi* is the common variety with violet-tinged seeds, which is sown as an ordinary dry crop subordinate to *bajri* and grows to a height of about four to five feet. The seed and foliage are extensively used as cattle food in Gujarat but the green pods are considered inferior as a green vegetable.

Guvar does not thrive on very retentive soil. In fertile free-working garden soils throughout Gujarat it grows well, and luxuriantly in the deep, alluvial sandy loams of North Gujarat, particularly when such are worked as garden lands, and get the liberal treatment usually given to such. In such land *guvar* is grown sometimes specially as a green manure crop. The seed is thickly broadcasted early in June. The crop may give some direct return in the shape of green pods for vegetables, but when it is in full vigour of growth, it is uprooted, the stems broken up and the side leaves stripped off. The whole is placed as a litter on the surface and then ploughed in. *Guvar* is specially suitable as a green manure crop, not only because it increases the soil's supply of nitrogen but because it is comparatively free from fibre when young and therefore rapidly decays in the soil.

III.—ORCHARD AND GARDEN PRODUCE

This heading includes (A) Vegetables (roots and tubers), (B) Green Vegetables, (C) Green Fodder for cattle and (D) Fruit trees.

It is not, of course, possible in this summary to make any detailed remarks on all the crops included in the above four classes. The more important of them are noted below.

A. Vegetables (roots and tubers).

Among these the chief are (1) Potato, (2) Sweet potato, (3) Elephant Foot and (4) Yam.

(1) Potato (*Solanum tuberosum*).—Potatoes are grown sparingly in garden lands in all parts of the Presidency. The chief cultivation is in the Poona District (mostly in the Khed Taluka), which claims over 75 per cent. of the total area. Fairly large areas are grown in Ahmednagar, Satara, Dharwar, Belgaum, Surat, Kaira and Ahmedabad.

The potato crop is grown both in the *kharif* and *rabi* seasons in the Khed tract and near Mahableshwar (Satara District). The potatoes of the latter place are famous for their excellent quality and large size. At Belgaum, the potato is purely a *rabi* crop while at Dharwar it is purely a *kharif* crop. Near Ahmedabad potatoes are grown in the bed of the Sabarmati river in the *rabi* season. Potato is essentially a light or free working soil crop. It succeeds best on naturally well drained, deep sandy loams, such as are found in the garden lands of Surat and Kaira. This crop thrives excellently in the sandy beds of the Sabarmati and other rivers in Gujarat when the streams get low in the fair season. In the Poona district it is rotated with onions, garlic, irrigated wheat, irrigated gram, groundnut and dry crop *bajri*. In Gujarat it takes its place among the numerous other garden crops which are grown.

The crop takes about 3½ months to mature. About 1,000 pounds of potatoes are required for seed per acre while the average outturn is from 6,000 to 8,000 pounds per acre, though over 16,000 pounds per acre has been reached. In good years potato is a paying crop, but if the crop fails, the loss is very great on account of the high cost of seed. Italian potatoes are imported in the Bombay Presidency annually for seed to a considerable extent.

(2) Sweet potato (*Ipomaea batatas*).—Sweet potatoes are grown in small patches all over the Presidency though not very extensively. The area is about 12,000 acres annually. The crop occupies an important position, however, amongst garden crops, being suitable for a considerable variety of soils. It will grow on the lightest description of sandy soil and will thrive on such soil if a liberal application of manure be given. It also does well on loams or on soils still stiffer in character. The crop does not thrive except on naturally dry land, a water-logged condition of soil causing serious damage. It is very commonly grown in dry river bed land when the stream is small in the fair season.

Sweet potatoes are generally grown during the cold season and under irrigation but in light dry land a rain crop is sometimes obtained, and it can, as a matter of fact, be grown at any time of the year in the Deccan. It may be grown after such rain crops as quickly ripen, but is usually the sole crop of the year. The crop generally ripens in about six months. The average outturn is about 8,000 pounds per acre though it may be considerably higher in very favourable circumstances. The vines, if fairly green, are greedily eaten by cattle.

Sweet potatoes provide a favourite food in both native and European households in India. Dried tubers are sometimes ground into flour which is baked into cakes and eaten by Hindus on fast days. Sweet potatoes have, in recent famines, been a favourable crop where well water was available, as they give a heavy yield both of fodder and food.

(3) Suran, Elephant's Foot (*Amorphophallus campanulatus*).—This crop is important in certain parts of Gujarat, especially in the valleys of the rivers Tapti, Purna and Ambika in the Surat district. The best crops are grown on the deep, alluvial, sandy (*goradu*) soils of the Charotar villages of Kaira and in somewhat similar soil in the garden lands of the Surat district. In the Deccan the *Suran* thrives excellently on mixed black soil, such as suits other irrigated crops. In Gujarat the cultivation is very careful and methodical. *Suran* is in fact a four year crop though the crops are harvested and replanted every year. An average crop will yield about 15 tons weight of corms per acre. The corm if stored well will keep good for a considerable period. More than three-quarters of the *Suran* grown in the Gujarat goes to Bombay, though the local demand is also fair.

(4) Yam, Goradu (*Dioscorea sativa*).—The crop is sparingly grown in most districts. The cultivation in the garden lands of Gujarat is most important. The yam likes a deep, free-working, sandy loam soil, well stocked with manure. It grows fairly well in soils of a still heavier character. It is seldom grown alone and is most generally a subordinate crop to ginger and turmeric. It is grown with these crops in the rotations of garden lands. The yam is essentially a rains crop but generally needs irrigation to bring it to maturity. In the *varkas* lands of the Konkan the crop is sometimes grown alone. The natural rainfall is sufficient. The crop ripens in October. In the Konkan, the outturn is 6,000 to 8,000 pounds per acre but in Gujarat it considerably exceeds this amount.

B. Green Vegetables.

Though the vegetable crops, grown for use in the fresh condition, do not form a large percentage of the total area, yet they are important in any consideration of the food of the people. They are almost exclusively grown on irrigation from wells, the area watered from Government canals or tanks being very small.

European vegetables, though important for the supply of the cities, and though, particularly in the case of cabbage, *Kohl rabi* and tomatoes, their importance is increasing, form a very small element in the area under this head. They are usually grown in the cold weather on free-working well manured soils, and their cultivation has been particularly developed in the neighbourhood of Poona, Belgaum and Nasik.

The country vegetables form much more important and widely cultivated crops. The following are the most important among these.

1. Bulbs, Tubers and Roots :—Among these may be mentioned :—

(i) Alu or arum (*Arum campanulaturn*) is grown to a very considerable extent in damp places with the help of manure and plenty of water. It is a favourite crop on sewage farms. It is generally planted in early June. The leaf can be cut in three months, and it goes on bearing for several years. The leaf and stalk are commonly eaten as a vegetable, the root and bulb more rarely, particularly on fast days.

(ii) Gajar or Carrot (*Daucus carota*).—This crop is grown in large quantities in good black soil. The carrot is sown in garden lands at any time of the year and in dry crop lands in July or August. It is ready for use in three months. The root is eaten as a vegetable both raw and boiled. It is also slit and dried in the sun and boiled, and eaten as required.

(iii) Mula or country Radish (*Raphanus sativus*).—Radishes are grown with the help of manure at any time of the year in garden lands and sometimes in dry crop land during the rains. The leaves are fit for use in six weeks, the root in two months and the plant bears pods or *dingris* in a fortnight more and continues bearing for a month and a half. The leaves are eaten boiled as a pot-herb. The root is eaten as a vegetable both raw and boiled.

Batata or Potato ; Goradu or yam ; Ratale or sweet potato ; and **Suran or Elephant's Foot,** have already been dealt with ; while **Kanda or onion** and **Lasun or garlic** are treated under ' Condiments and Spices.'

2. Fruits used as Vegetables :—Among these may be mentioned :—

(i) Vangi or Baingan, the Egg-plant (*Solanum melongena*). This, which is perhaps the most important country vegetable, is grown with the help of manure and water in considerable quantities in rich soil often on river bank mud, and in gardens, almost all over the Presidency. In gardens it is sown at any time of the year. In dry land it is sown in June in seed-beds, planted during July, begins to bear in September and if occasionally watered goes on bearing for four months. Its oval egg-like and slightly bitter fruit is regarded as one of the best of vegetables. It is boiled and fried, made into pickle and sometimes slit and dried in the sun and kept in store. There are several varieties varying in the size, shape and colour of the fruit. The oval fruited variety known as *baingan*, the variety with a fruit sometimes two feet in length called *bangali*, and the wild variety called *dorli vangi*, with a small and nearly round fruit are the chief.

(ii) Dodka or the Sharp cornered cucumber (*Luffa acutangula*).—This is grown with the help of water and manure usually in rich land round the edges of other crops, or in gardens at any time. In dry crop lands it is sown in June-July, grows exceedingly fast and to a great size and begins to bear in two or two and a half months. The fruit which is dark green and six inches to a foot long, is seamed with sharp ridges from end to end. The fruit is eaten boiled, while the ridges make excellent *chutni*.

(iii) Padval, snake gourd (*Tricosanthes anguina*).—Except that it is never raised in dry crop land, this is grown in the same tracts and in the same way as the *dodka*. The fruit which is about three feet long and two or three inches thick, is marked lengthwise with white lines. It is eaten boiled as a vegetable. The poorer people use the leaves, stalk and root medicinally.

(iv) Ghosale (*Luffa petandria*).—Is grown and used in the same way as the *dodka*. The fruit, the only part eaten, is smooth, the same size as *dodka* and marked lengthwise with light lines. If watered the plant bears for two years.

(v) Karle (*Momordica charantia*).—This is grown and used like the *dodka* and *ghosale*. The surface of the fruit is roughened with knobs and each seed fills the whole cross section of the fruit. It is bitter and must be well boiled before it is eaten.

(vi) Khira or Kakdi, common cucumber (*Cucumis sativus*).—This is of two kinds, green and white fruited, and is sown in dry crop lands in July and August round the edge of early crops or in garden lands at any time. It begins to bear in about two months. The fruit is ten to sixteen inches long and is much eaten both raw and cooked.

(vii) Kharbuj, melon (*Cucumis melo*).—Is sown in the cold and hot months in moist sandy spots in river beds sometimes with water-melon. The plant is manured when six weeks old and the fruit ripens in the third or fourth month. The fruit is round, green or yellowish, the skin covered with a net-work of raised brown lines. It is usually eaten uncooked.

(viii) Kalingad, Water-melon (*Cucurbita citrallus*).—This is a creeping plant and is sown both in the cold and hot months in moist sandy spots in river-beds, and manured when six weeks old. The fruit is smooth and round, dark green mottled and stripped with a lighter green. It is eaten both raw as a fruit and cooked in different ways. The flesh is pink to red, very soft, watery and sweet and the fruit is a favourite one in the hot weather.

(ix) Dudh-bhopla or the Long White Gourd (*Cucurbita longa*).—This is a creeping plant and is usually grown in garden lands round the edge of the crops. It begins to bear in two or three months. The fruit which is sometimes three feet long is a common and favourite vegetable. The skin and seeds are used in *chutni*. It is also made into a sweetmeat called *halva*.

(x) Tambda Bhopla, Red Pumpkin (*Cucurbita melopepo*).—Is usually grown round the edges of garden lands. It is sown at any time of the year and begins to bear in about three months. The fruit is sometimes very large, about eighteen inches in diameter with reddish flesh. It is cooked as a vegetable and the shoots and young leaves are used as a pot-herb. The seeds are also eaten.

(xi) Kohola (*Cucurbita alba*).—Is grown round the edge of gardens at any time of the year. It begins to bear in three or four months. The fruit is

larger than the red pumpkin and the flesh is white. It is never eaten raw but is much esteemed as a vegetable and is made into a sweetmeat called *halva*.

(xii) Bhendi, Edible Hibiscus (*Hibiscus esculentus*).—Is of two varieties, *gari* or early and *hali* or late. Both are grown in gardens almost everywhere and all the year round. They are also grown without water and often even with manure. As a dry crop the early or *gari bhendi* with large leaves and short thick pods is sown in June, grows about two feet high, and bears from early August to December. The late or *hali bhendi* with small leaves and thin prickly pods, is sown in June or July along the edges of or among *bajri* crops, grows seven feet high, begins to bear in late September and goes on bearing till the end of November. Both kinds are grown in garden lands all the year round. The green pods are eaten boiled as a vegetable or fried. The ripe seeds are used in curry and *chutni*.

3. Leaf Vegetables and Pot-herbs.—Among these may be mentioned :—

(i) Chakvat, Goose Foot (*Chenopodium album*).—Is usually grown in gardens but sometimes in corners of early grain fields. It is ready to cut a month after sowing. The plant is much esteemed as a pot-herb.

(ii) Chuka, Bladder Dock (*Remex vesicarius*).—Is cultivated in gardens at any time of the year. The plant seldom grows to more than ten inches high. The plant has a pleasant sour flavour.

(iii) Tandulia, Eatable Amaranth (*Amaranthus oleraceus*).—Is grown in gardens at any time of the year and is fit for use five or six weeks after sowing. The plant grows a foot high and has the stem red near the root. Only the leaves and top shoots are eaten as a pot-herb.

(iv) Rajgira (*Amaranthus candidus*).—This crop which is found in two varieties, red and green, is grown in gardens at any time of the year and sometimes among watered wheat. In the red variety the seed plume is deep crimson and the stem and leaves are tinged with crimson, otherwise the varieties do not differ. The plant stands three to five feet high and has a heavy over-hanging central seed plume. The seed is exceedingly small and is usually trodden out by human feet or rubbed out by hand. It is much eaten on fast days either made into balls, or in cakes made from the flour of the parched grain. The leaves are commonly eaten as a pot-herb.

The other leaf vegetables generally used are **Chavli, Math, Methi** and **Mohari.** Of these **Chavli** and **Math** are treated under ' pulses ' and **Methi** and **Mohari** under ' condiments and spices ' as the grains which the plants yield are more important, than the leaves which are used as vegetables.

C. Green Fodder.

This has been dealt with under " Fodder " on pages 26—30.

D. Fruit Trees.

The common fruits grown and used in the Bombay Presidency are plantains or bananas, mangoes, guavas, oranges and other citrus fruits, pomegranates, grapes, figs, cocoanuts, custard apples, pine-apples, papayas, bullock's heart, jack fruit and kashew nut.

Plantains *or Bananas* (*Musa sapientum* ; *Musa paradisiaca*).—The total area under plantains in the Bombay Presidency is over 15,000 acres. The largest centres of production are located in the districts of Kanara, East Khandesh, Thana, Satara, Bijapur, Sholapur and Poona. In Gujarat and the Konkan (except Thana) the crop occupies very little area. The fruit is very popular among all nationalities and considerable quantities of plantain are exported from Bombay to Karachi and the Punjab. Plantains thrive in light soils. There are many varieties named according to the colour, the size and shape of the fruit.

Mango (*Mangifera Indica*).—This is perhaps the fruit *par excellence* of India and the mangoes of Bombay are unrivalled in any other part of the country. Except in the sandy parts of Gujarat it is grown in all districts fairly generally but the climate of the Konkan seems the ideal for the best varieties. It is only in the Konkan that large areas are laid out to mangoes, and they are treated as a commercial crop, though a beginning has been made in Belgaum and Dharwar in the same direction. The best varieties which are always in demand at a good price are the *Alphonso* or *Hapus* and the *Payari*. In the Konkan the mango begins to bear in the fifth year but elsewhere it takes longer, but, once established, a mango plantation lasts for generations. Fairly large quantities of mangoes from Madras and Goa find their way to Bombay, while large quantities leave Bombay for the Punjab, Sind, Baluchistan, etc. Varieties like *Alphonso* which keep good for a long time, are exported even to England and France.

The area recorded as under mango is 10,500 acres, but this in no sense represents its importance, for odd trees occur in almost every village, and the fruits are used everywhere.

Guavas (*Psidium pomiferum*).—The total area under guavas is about 4,000 acres. The crop is well spread in the districts of the Deccan and Karnatak. Ahmedabad, Broach and Surat return also a fair area. Guavas practically have no place in the Konkan. Good guava plantations are to be seen in the vicinity of Poona, Satara and Dharwar.

The guava trees begin to bear fruit when about four or five years old. There are two principal flowering seasons. The fruit of the first season is ripe in August-September, of the second about November-December.

Guavas are very popular with the Indian section of the population and the Bombay Presidency does not export the fruit. On the other hand, it imports guavas from Agra and Delhi.

Oranges (*Citrus aurantium*) *and other citrus fruits.*—The total area under oranges and other citrus fruits is about 5,000 acres, Poona district claiming about 35 per cent. and Ahmednagar nearly 25 per cent. of the acreage. East Khandesh (mostly Chalisgaon Taluka), Ahmedabad (chiefly North Daskroi) and Nasik also return a fair area. In the Ahmednagar district the fruits chiefly find a place in the central talukas while in Poona the important centres of cultivation are Purandhar, Haveli, and Sirur talukas. Oranges are not grown in the Konkan and only to a very small extent in Gujarat. On the other hand there is a fair area under pomeloes in the Thana district. But on the whole, the Bombay Presidency is an importing centre for citrus fruits, receiving oranges in particular from Nagpur, East Africa, Italy and Persia. There is however a small export trade to the Punjab, Kathiawar and Karachi.

Pomegranates (*Punica granatum*).—The best pomegranates, as is well-known, come from Arabia and Persia. In the Bombay Presidency good pomegranates are grown in the Dholka Taluka of Ahmedabad and near Poona and Ahmednagar. Of the total area of about 1,500 acres, nearly half is claimed by the Poona district where most is grown in the Haveli, Bhimthadi and Purandhar talukas. The Dholka taluka of the Ahmedabad district claims 15 per cent. of the total area in the Bombay Presidency. The Ahmednagar district grows about 15 per cent., most of it being claimed by the Pathardi, Rahuri, Ahmednagar and Sangamner talukas.

Seedlings are grown from seeds of selected fruits and are ready for transplanting in their third year. After three years further the plants generally bear fruit.

Grapes (*Vitis vinifera*).—The total area under grapes is about 450 acres only, three-fourth of the area being concentrated round about Nasik and its suburbs. Of the remaining area about one-half is found at and near Ahmednagar and nearly half in the Junnar taluka of the Poona district. Grapes from Nasik are recognised to be of superior quality and find a ready market in cities in and outside the Bombay Presidency. Some fruit is however imported in the Presidency from Quetta, Malta and even from Spain. The cultivation of grapes requires both much care and money but as the crop, if successful, is very paying, its area is extending very fast in Nasik and Khandesh.

Figs (*Ficus carica*).—Figs thrive best in localities having light early rains and in loamy soils with free drainage. They like a dry climate and are grown to perfection near Poona, in a portion of the Purandhar Taluka. In fact, the area elsewhere is negligible.

Young plants are raised from cuttings planted in a nursery. Two year old plants are planted in a specially prepared field. They take two years to bear fruit. The fruit begins to ripen in March and lasts till June. Crows are the greatest pest of this crop and the plantation of figs requires very careful watching. So far no dried figs are prepared on a commercial scale.

Cocoanuts (*Cocas nucifera*).—For all practical purposes the growth of cocoanuts is limited to the coast and the banks of salt water creeks. Hence its cultivation is almost limited to the Kanara, Ratnagiri, Kolaba, and Thana districts. The total area under cocoanuts is about 38,000 acres. The average annual yield of tree varies from 75 to 100 nuts and is gathered in three or four pickings.

The cocoanut palm also yields toddy from the fruit stalk, the average yield amounting to 3 or 4 quarts per day.

Sitaphal or *Custard apple* (*Annona squamosa*).—A custard apple plantation is raised almost like one of guavas. The plants are raised from seeds, grafting never being resorted to. The plant bears fruit in about three to four years. There is only one fruiting season which occurs between August and November. The fruit is plucked, as it ripens, during this period. Custard apples require regular watering and a cool situation. The fruit is exclusively locally consumed.

Ramphal or Bullock's heart (*Annona reticulata*).—This is common in the western and central portions of the Deccan and Konkan chiefly in gardens, and is valued considerably. In good soil, the tree sometimes attains a height of forty feet. The fruit ripens generally in the latter part of the rainy season and is eaten to an appreciable extent by Indians though only rarely by Europeans.

Pine-apple (*Ananas sativa*).—Pine-apples thrive in the hot moist climate of the Konkan and are grown to a very limited extent in the betel-nut plantations of the Kolaba and Ratnagiri districts in sandy loams, in the coast talukas of

Thana, and in the garden soils of Surat. The quality of the pine-apples is generally poor.

Papaya (*Carica papaya*).—Papaya or papaw is grown more as a secondary crop in young fruit plantations, such as an orange plantation, being planted on the borders or between the rows of the principal fruit trees. It is nevertheless one of the most important and valuable fruit crops. To make a regular plantation the field is put in good order by thorough cultivation and laid out for irrigation in the hot weather. The seedlings are raised in nursery beds. As soon as the first rains are over, they are ready for transplantation. Only the female flower bearing trees are retained. Planted in June the trees should begin to bloom at the end of the rains and the fruit ripens during the cold and the hot seasons. As a rule the plantation is kept up for three years. The second year's fruit attains perfection. In the third year it deteriorates both in size and flavour. If the trees are in thriving condition, they bear fifty to one hundred fruits in the year.

When ripe the fruit usually attains the size of a small melon ; the interior is soft, yellow and sweetish and has a peculiar fine flavour. The fruit is eaten with great relish by many. The unripe fruit is cooked as a vegetable and also pickled.

Fanas, *Jack fruit* (*Artocarpus integrifolia*).—This is both cultivated in the Konkan and West Deccan and found wild in the evergreen Sahyadri forests. Its dome of dark foliage, with the stem burdened with monster fruits (often 2½ feet in length) is perhaps one of the most characteristic features of the surroundings of villages especially near the Ghats. There are two varieties, *kapa* a superior variety and *barka* an inferior variety which is only useful in making a kind of cake—*phanaspoli*. Stripped of its thorny cover the unripe fruit is eaten as a vegetable and when ripe as a fruit. The seeds of the ripe fruit when roasted in hot ashes are very palatable and nutritious and in taste resemble somewhat Spanish chestnuts. They are, in bad seasons, often the only food of the poorest hill-people.

Kaju or cashewnut tree (*Anacardium occidentale*).—This is an evergreen tree, growing to a height of about 30 feet, and a girth of about two to three feet, flowering in December to February and bearing fruits usually between March and April, found in the Konkan. The tree bears a small fruit at the end of which is the nut known as the cashewnut commonly eaten roasted. The ripe fleshy stalk or *torus* of the plant which has a pleasant sour flavour is also eaten. The raw kernel is unpleasantly bitter but when fried and coated with sugar it is much prized in confectionery. In the Konkan a medicinal drink is made from the enlarged peduncle of the fruit.

IV.—DRUGS AND NARCOTICS

In this class are included (1) Tobacco, (2) Indian Hemp, (3) Betel leaves, (4) Betel nut, (5) Tea, (6) Coffee, (7) Opium.

Tobacco. *Nicotiana tabacum*. G. *Tambaku, Tamaku ;* M. *Tambakhu, Tamakhu ;* K. *Hogesoppu*.—Area in 1922-23—94,568 acres.

Of the plants grown for their narcotic power, tobacco is probably the most important crop all over the world. It occupies about a 100,000 acres in the Bombay Presidency, of which the Kaira and Belgaum districts together claim about three-fourths. The Satara District with over 8,000 acres stands third. The districts of Ahmedabad and Broach in Gujarat, East Khandesh, Ahmednagar and Sholapur in the Deccan, and Bijapur in the Karnatak also return fair areas. The Konkan districts do not grow any tobacco. The cultivation of tobacco receives specially careful attention in the Nadiad, Petlad and Anand talukas of Kaira, the Walva and Karad talukas of Satara and the Chikodi and Hukeri talukas of the Belgaum District.

In Kaira and Ahmedabad tobacco is grown in alluvial soil of great depth, which is of fine consistence and varies in character from a sandy loam to a moderately stiff or clay loam. The Broach tobacco is grown chiefly on the banks of the Nerbada on *bhatha* land which is alluvium of sandy loam consistence, brought down by annual floods and found on the shelving banks of rivers (chiefly the Nerbada). In Satara, Ahmednagar and Khandesh tobacco is grown to some extent as a riverside crop but also to a considerable extent on the greyish coloured soils of old village sites or as a dry crop on purely black soil. In the latter case the fields are generally close to the villages. In Belgaum the crop is extensively grown in Chikodi, to a fair extent in Athni but sparingly in other talukas. The crop is grown in black soil fields near villages and in riverside fields. The best tobacco in the Belgaum District is grown on the deep alluvial lands near the Krishna.

In the Kaira District and the adjoining Baroda Territory the cultivation of tobacco is extensive. Particular wells in this tract contain water which is specially valuable for irrigating tobacco, being of high manurial value. In some places in this tract, the water from sweet wells is mixed in definite proportion with water of salt wells which contains large amount of nitrates and the mixture used for irrigating tobacco.

Tobacco requires very careful treatment of the seed bed and of the field. The field is well prepared and manured. Seedlings are ready for planting out when about forty days old. The planting is usually done in the month of August. After about six weeks the young crops are topped keeping ten to fifteen leaves, the lowest three of which are subsequently removed. After topping of the plants, suckering continues and at the same time the land has to be hoed and weeded. Tobacco stands in the field for about five months. It is both an irrigated and a *Jirayat* or dry crop. In Gujarat tobacco is largely irrigated ; in the Deccan it is generally taken as a *Jirayat* crop. The method of harvesting and curing varies according to the kind of tobacco to be made. Harvesting, drying in the field, pitting or heaping, tying into bundles and stacking require cosiderable skill and attention.

Indian Hemp. *Cannabis sativa*. G. and M. *Bhang, Ganja* ; K. *Bhang, Ganje*.—Area in 1922-23—325 acres.

This plant is useful as (1) a narcotic crop, (2) for its fibre and (3) for its seed, which is commonly used as food for cage-birds in Europe and yields an useful oil.

In the Bombay Presidency only the district of Ahmednagar returns an area of about 300 acres. Its cultivation is strictly controlled by Government, as it is only grown for the sake of the drug. The hemp plant requires good soil and careful tillage. It does well on fairly deep, friable, well drained soil. The patches in which hemp is grown are usually situated close to the village and are naturally manured by village sullage, etc. The seed is drilled in June-July and the crop is ready about December. If the late rains are deficient, two or three waterings from a well or other source of irrigation are given. The crop is harvested by cutting all flower-bearing branches along with about one foot of the branch stalk.

A beaten threshing flour is prepared, and on this the flower bearing branches are left to exposure and the influence of dew for one night. Next day these branches are heaped in small heaps with the tops in the centre and are trampled and trodden down by men. The result is that the flower heads are pressed flat and *ganja* is obtained by winnowing and picking these flower heads by hand, from the chaff and broken flower heads, which mixture is known as *bhang*. The gum like substance which adheres to the feet and hands of men who trample is scraped off and is sold or used as what is known as *charas*. *Ganja* is smoked in an ordinary Indian pipe, while *bhang* is made into a fine paste, mixed with water or milk and drunk. Spices are not unfrequently added to the paste. *Charas* is used in smoking only but it is not so extensively used as the other two.

Betel-Vine. (*Piper betle*). G. M. *Pan* ; K. *Villedele*.—Area in 1914-15—4,547 acres.

Betel leaf is produced all over the Bombay Presidency, and is probably the chief garden crop in the country. The chief varieties are *Kali* or black, *pandhari* or white, and *velchi* or small. The chief centres of cultivation are Dharwar, the Deccan (except Sholapur) and Kanara and Thana in the Konkan.

The methods of cultivation slightly differ according to soil and climatic conditions but the two typical methods followed in the Deccan and Konkan are noted.

In the Deccan the land is well prepared and manured and made into beds. Shoots of quick growing trees like *Shevri* (*Sesbania ægyptica*), *Pangara* (*Erythrina indica*), etc., are planted for the vines to climb on and for giving them shade. The sets of vines are planted, regularly watered and as the creepers grow they are tied to the stems of the *shevri*, etc. The plants do not yield leaves fit for consumption till the third year, after which time a crop is plucked every eight to ten days. The vine is cut to the ground once a year and re-manured, after which new shoots spring up and are trained on the trees.

In the Konkan, the crop is grown on soil which is not either salt, stony, damp, or stiff. Such land is generally selected after a crop of rice and a booth is built to cover the young plants. In December and January shoots are planted in well-watered pits, regularly watered and manured afterwards. About the end of June, the plants have attained a considerable height, they are unfastened from their supports, allowed to droop to within a foot of the ground and the side shoots are gathered into the pits and covered with earth so as to produce new roots. Manure is again applied to each pit and the main stem is again bound to the reeds and trained. A second thatched booth is reared over the first in September and the creeper is trained up its posts and allowed to climb over the roof. The leaves are ready for cutting after twelve months and yield a steady crop for another year, after which time the vine is cut down and young shoots planted in another place.

In the Bombay Presidency the best *pan* leaves are grown in Poona, Satara, Belgaum and above the Western Ghats. A large quantity is exported from these centres to all the chief cities, and especially to Bombay.

Betel-nut. *Areca catechu.* G. *Sopari*; M. *Supari*; K. *Adike.*—Area in 1914-15—20,052 acres.

The betel-nut palm stands next in importance to cocoanut among palms in Western India. Except in the spice gardens of Kanara where it forms one of the chief crops with cardamoms and pepper, betel-nut palm is grown in cocoanut gardens. It grows almost on any soil provided it is well-manured. The palms are raised in seed beds and in Kanara, are once transplanted before they are planted out permanently. The young trees are watered regularly at short intervals. In Kanara gardens the soil is so retentive of moisture that only a little irrigation is required in the hot months.

The betel-palm begins to bear fruit when it is five to seven years old, according to the care bestowed on it. The trees continue to bear for 20 to 40 years. The average annual yield is about 400 nuts, the maximum yield exceeding 1,000 nuts. Before they are brought to market the nuts are subjected to different methods of treatment for the different trade varieties.

Tea and **Coffee** are scarcely grown in the Presidency and **Opium** cultivation is restricted by Government.

V.—CONDIMENTS AND SPICES

This class comprises chiefly Chillies, Garlic, Onions, Turmeric, Ginger, Black Pepper, Cardamoms, Fennel, Coriander, Cumin, Ajwan, Fenugreek, Tamarind, etc.

Chillies or Cayenne Pepper. *Capiscum frutescens.* G. *Marcha*; M. *Mirchi*; K. *Mensinkai.*—Area in 1914-15—109,072 acres.

Chillies occupy about one and a quarter lakhs of acres in the Bombay Presidency. Dharwar with an area of about forty-eight thousand acres is by far the most important. Belgaum with an acreage of thirteen thousand acres comes next. Khandesh, Satara, Poona and Sholapur grow roughly eight thousand acres each, Nasik and Ahmednagar about 5,000 acres each. The crop is not important in Gujarat or the Konkan. The crop is invariably planted in the rains but if helped by irrigation the growth extends into the *rabi* season. Chillies are grown to a large extent alone but are also sometimes planted as subordinate to other garden crops.

The best dry crop chillies are grown on deep retentive black soil. The irrigated crop is grown in the Deccan in mixed black soil. In Gujarat the best crops are got in *besar* (clay loam) soils. The Bombay market is largely supplied with chillies grown without irrigation in the deep black soils of the Krishna valley.

The field is thoroughly cultivated and well-manured. The seedlings which are raised in a nursery are transplanted about July. The fruit ripens three months after transplantation. Picking goes on for three to five months. The irrigated crop lasts longer than the unirrigated crop. Where there is a demand for green chillies they are picked three times a month. Ripe chillies are picked three or four times in the course of the whole season. After picking they are dried in the sun and taken to the market. A good unirrigated crop produces about 1,000 pounds per acre. The irrigated crop yields higher. Chillies are an uncertain crop, as cloudy weather at the time of flowering proves disastrous. The flowers drop and the yield is greatly reduced.

There are several varieties of chillies such as the ordinary long narrow and tapering variety; *lavangia* (clove) or small variety; *bor mirchi* a variety grown in the Southern Maratha Country bearing small round fruits like those of *bor* (*ziziphus jujuba*), etc., etc.

Chillies are used in *chutnis*, pickles and Indian condiments and also medicinally, and form a universally used ingredient of every day food.

Onions. (*Allium cepa*). G. *Kanda*; *dungli*; M. *Kanda*; K. *Ullegadde.*—Area in 1914-15—15,817 acres.

This crop is very important in the Deccan notably in the north of the Poona district and some talukas of the Nasik district. It is also grown in certain parts of the Satara district (chiefly in the Walva taluka) and in West Khandesh near Dhulia. In Gujarat it is purely a crop of garden lands. The cultivation is not yet important in the Konkan, but it is increasing in Kanara.

Onions are grown alone and almost always as a cold weather irrigated crop. The crop is rotated with other garden crops or sometimes follows *bajri* as a second crop in the cold weather. The seedlings which are raised in well-prepared seed-beds are transplanted in November-December and the crop is ready in March-April. A good crop may produce as much as from 30 to 35 thousand pounds of onion per acre.

Garlic. *Allium sativum.* G. *Lasan*; M. *Lasun*; K. *Bellulli.*—Area in 1914-15—5,420 acres.

Garlic is an important crop in the Sinnar and Niphad talukas of the Nasik district where it is very carefully cultivated. Elsewhere it is found in small areas all over the Bombay Presidency, the most important centres, apart from Nasik, being Dharwar, Belgaum, Poona and Satara.

Garlic, like onions, is generally grown alone and as a cold weather crop. The crop is propagated from cloves. These are broad-casted very carefully in beds in October and lightly covered with soil. The crop ripens in February-March. A good crop yields from 8,000 pounds to 10,000 pounds per acre.

Garlic is extensively used in *chutnies*, as condiments, in seasoning vegetables and curries and also medicinally.

Turmeric. *Curcuma longa.* G. *Haldar*; M. *Halad*; K. *Arshana.*—Area in 1914-15—6,845 acres.

In the Bombay Presidency there is an area of about five to six thousand acres under turmeric. Satara is much the most important centre of cultivation and claims nearly four-fifths of the whole. Sholapur and Belgaum grow fair areas. Throughout Gujarat the crop is important as a subordinate crop with ginger.

Turmeric does best in medium black soil naturally well-drained. Yams are often grown subordinate to turmeric. The sets of turmeric are selected pieces of rhizomes, with two or three eye buds. They are planted in May or June. The crop is manured; waterings are given whenever there is a break in the rains and weeding is done fairly frequently. The crop is harvested about January and yields about 12,000 pounds to 15,000 pounds of turmeric and 6,000 to 9,000 pounds of yams per acre.

The turmeric crop in the Bombay Presidency is practically exempt from any kind of disease. During excessive rain on medium black soil, however, the sets are apt to rot.

There are two distinct varieties of turmeric:—(1) with hard rich coloured rhizomes, chiefly used in dyeing known as *lokhandi halad* and (2) with softer, larger, lighter coloured rhizomes which are usually used for eating.

Ginger. *Zingiber officinale.* G. *Adu*; M. *Ale*; K. *Alla.*—Area in 1914-15—700 acres.

This crop usually occupies from 1,000 to 1,500 acres annually in the Presidency proper. Ahmedabad, Kaira, Surat, Satara and Thana are the chief centres of cultivation. In other districts of the Presidency the cultivation is very trifling.

Ginger likes a deep, rich, free-working soil which is naturally well-drained. It grows to great perfection on the deep alluvial sandy loams (*goradu*) of Kaira and Baroda. The garden land of Surat in which the crop is important is somewhat heavier but of the same general character and consistence. In the Thana district where the rainfall is heavy the crop is only grown in the strip of deep, sandy soil which fringes the coast in the Mahim and Bassein Talukas.

Ginger in Thana is grown alone. In Northern Gujarat however it is planted with either yams or turmeric or both. Ginger is planted in sets in well-prepared and well-manured field before the commencement of the monsoon. The crop is irrigated if needed and castor-cake manure applied. The crop is harvested in January and yields 10,000 to 12,000 pounds of green ginger per acre.

Sunth, or dried ginger, is prepared by soaking the green ginger in water, removing the skin by rubbing and drying the ginger in the sun.

Black Pepper. *Piper nigrum.* G. *Mari*; M. *Miri*; K. *Menasu.*—Area in 1914-15—4,160 acres.

The commercial product is the dried fruit of a vine-like plant which is confined to the district of Kanara in the Bombay Presidency. Of the total area occupied by the crop of 4,000 acres, half is claimed by the one taluka of Siddapur, and over one-third by Sirsi alone. Yellapur with nearly 300 acres comes next. The area in the other talukas of the district is comparatively insignificant, being less than 50 acres each. In the Kanara gardens pepper is trained on the *supari* or betel-palm trees. The plant is propagated by layering or cuttings. When the betel-palms have been seven or eight years permanently planted, pepper is planted at the roots of the trees, and is trained on them as it grows. Both the betel-palms and the pepper vines are regularly manured. Pepper vines propagated in June-July usually bear berries which are ripe for picking about March. The pepper plants in an established plantation rise to a height of fifteen to twenty feet. A plantation is in bearing usually three or four years after it is started. The yield depends upon liberality in manuring and careful management, also upon the rainfall. Heavy rain after flowering causes the flowers to drop while a long break in the rains causes the plant to wither. The rainfall hence ought to be well distributed and copious. The vines on one palm when in full bearing yield in a good season about four pounds of dried pepper.

The berries when plucked are steeped in water and the pulp rubbed off. The stone remaining furnishes the white pepper of commerce. Berries which

are dried without the skin being removed give the more common black pepper which is naturally cheaper than the white sort.

There is a small cultivation of Long Pepper (*Piper longum*) in the Thana District but it has little economic importance.

Cardamoms. *Elettaria cardamomum.* G. *Elchi*; M. *Veldoda*; K. *Yalaki.*—Area in 1914-15—1,395 acres.

The total area under cardamoms is about 1,500 acres. All of it is found in the Kanara District, where the Siddapur and Sirsi talukas claim over 75 per cent. of the area while the Yellapur taluka has about 100 acres under this crop.

Cardamoms thrive under the same conditions of soil, etc., as betel-palms and pepper but by preference is grown in a cool, very shady garden with soil kept continuously moist by favourable position or light watering of sides of the seed bed. The plant can be propagated by sub-division of the rhizomes or from seed. In Kanara the crop is chiefly raised from seed. The seed is sown in a well-prepared nursery by about September-October. The seedlings are kept in the nursery for fifteen to eighteen months. They are then about four feet high.

Cardamoms are planted permanently in the garden at two seasons from March to June or from September to October. They are usually planted in the same lines as the betel-palm and intermediate between two trees. By this arrangement the cardamom plants are protected from the sun, wind and rain.

The plants are in bearing the year after being planted, but do not yield much the first year. A well-grown healthy plant may yield upto half a pound of dry cardamoms but an average out-turn amounts to about 1½ ounces per plant. The fruit when gathered is dried in the sun and bleached for the market.

Numerous risks attend the cultivation of cardamoms. It is a delicate plant and has to be protected from sun, wind and heavy rain. Borers and grubs cause considerable damage to the crop, while the fruit is often eaten by snakes, rats and other vermin. There has been, moreover, very general deterioration of the crop in the Kanara area which now threatens to ruin the cultivation.

Coriander. *Coriandrum sativum.* G. *Dhana*; M. *Dhane*; K. *Havija.*—Area in 1914-15—9,571 acres.

Coriander with an area of about 9,000 acres in the Bombay Presidency, though cultivated almost everywhere, is most largely grown in Khandesh and also to an appreciable extent in Satara. When green, it forms an excellent vegetable and is generally used for seasoning curries and *chutnis*. The ripened seeds—*dhane*, pounded fine, are used in most kinds of Indian diet. Green coriander is an excellent pot-herb and finds a ready market in large cities and is exported to Bombay to a considerable extent from the Satara and Poona Districts.

Fenugreek. *Trigonella fœnumgrœcum.* G. M. *Methi*; K. *Menti.*—Area in 1914-15—3,401 acres.

Fenugreek has an area rising to about 6,000 acres in the Bombay Presidency. Though it is one of the most commonly grown of all native vegetables it occupies a fairly large area only in the Nasik District. Fenugreek is sown in the rains and in the cold season under irrigation. In rich soil it is fit for cutting as a pot-herb about the third week after sowing and finds a ready market in cities. The ripe seeds are largely used in compounding native medicines and sparingly as an article of food.

Fennel. *Fœniculum vulgare.* G. *Variali*; M. *Badishep*; K. *Sabbasige.*—Area in 1914-15—1,871 acres.

Fennel occupies an area of from two to three thousand acres and is grown in some districts of the Gujarat and the Konkan. In Gujarat it is grown in *gorat*, light soil moderately manured. The land is ploughed, harrowed and rolled three times between June and October. About nine pounds of seed per acre are scattered by hand into beds which are irrigated once a fortnight until January. The crop is cut unripe and allowed to be on the ground for four or five days. A good average crop yields about 700 pounds per acre. In the gardens in the Deccan it is sown at any time. It is also sown on the edges of dry crops in July and August. Kaira in Gujarat and Khandesh in the Deccan are the more important centres of cultivation. The seed is eaten with betel, used in curries, and also medicinally. The oil which the fruit yields is used in the manufacture of cordials.

Cumin. *Cuminum cyminum.* G. *Jiru*; M. *Jire*; K. *Jirgi.*—Area in 1914-15—917 acres.

Cumin with an area which may rise to nearly 2,000 acres is confined to Gujarat and almost entirely to Kaira. The seeds are used as a spice and as such form an ingredient of many curry powders and pickles used by the natives. The seeds and the oil which they yield are both used medicinally.

Ajwan Seed. *Carum copticum.* G. *Ajmo*; M. *Onwa*; K. *Ajwan.*—Area in 1914-15—302 acres.

This has an area of not more than 600 acres and is chiefly cultivated in Khandesh. The seeds are aromatic and are used in spices. The seeds have considerable medicinal value and have come in special notice in England and Germany for the manufacture of *Thymol*, large quantities of which are now made and used as an antiseptic.

Tamarind. *Tamarindus indicus.* G. *Amli*; M. *Chinch*; K. *Hunase.*—Area in 1914-15—285 acres.

This fruit tree is classed under "spices and condiments" as its pods are extensively used for the purpose. It is not possible to say what area the tree exactly occupies as in most places it is planted round the villages and in unoccupied land. It is also found in gardens, near old temples and along roads. It grows 60 or 70 feet high and gives abundant shade. The fruit (a large flat pod, filled with acid pulp) which ripens in February is salted and stored in almost every house, and is a favourite and almost an essential ingredient of curries and *chutnis*. The seeds are roasted and eaten by children and by the lower classes; in seasons of famine it is ground to flour and made into bread.

VI.—STARCHES

These are scarcely grown and need not be considered.

VII.—SUGARS

Sugarcane. *Saccharum officinarum.* G. *Sherdi*; M. *Us*; K. *Kabbu.*—Area in 1922-23—60,180 acres.

Sugarcane is by far the most important of the class. The importance of this crop to the agriculture of the Presidency is much greater than that of many crops which occupy a much larger area since the capital employed per acre, the value of out-turn and the net profits are very much greater than is the case with wheat, cotton or the country food-grains *jowari* and *bajri*. Sugarcane is marketed either as cane for eating or manufactured into a crude sugar known as *gul*.

Sugarcane is the only substantial source of sugar in this Presidency and is grown more or less in all districts. It occupies an area of about 60,000 acres of which Poona and Belgaum each claim roughly 10,000 acres, and are followed by Satara and Ahmednagar with an area of nearly 7,000 acres each under the crop. Nasik with 4,500 acres, Surat with 3,000 acres and Kanara with slightly over 2,000 acres under the crop are other important centres of cultivation.

There are many varieties of cane grown in the Presidency of which the principal are as follows :—

Thick and juicy canes.—(1) *Pundya* (pale yellow) grown on the Deccan canals and in the Deccan districts. This is the most widely distributed cane variety in the Presidency and it probably occupies about 75 per cent. of the total area under the crop. This variety can scarcely be surpassed for the production of *gul* or crude sugar. (2) *Kabirya* (striped) grown in Sholapur, in the Walwa Taluka of the Satara District and in parts of Kanara. (3) *Malbari* (pale yellow) chiefly found in the Surat District. Medium thick canes less juicy than the above group. (4) *Kavangiri* or *Kala Malbari* (medium thick red cane) in the Konkan and in the Nasik district. (5) *Bangdya*: in parts of Nasik.

Thin and hard canes.—(1) *Khadya* is grown in the western parts of Nasik and in West Khandesh and (2) *Wansi* in parts of the *Mallad* tract.

The area occupied by the medium and thin varieties is only relatively small. The soft cane is very liable to damage by cattle, pigs and jackals. The hard cane is often popular because it is not so liable and because it will mature with a much smaller supply of water.

Sugarcane is always an irrigated crop in Bombay. It requires heavy manuring and regular watering to get the best results and it does better on level well-drained soils. Soils two to four feet deep with good drainage are specially suitable and in such soils it requires watering once in ten days. On shallow soils it requires watering every sixth or eighth day.

The crop is propagated from sets planted usually in prepared beds. Sometimes whole canes are planted by means of the plough. According to the soil, climate and the variety to be grown the time of planting varies in different localities. Generally speaking, however, in the Karnatak districts all the cane is planted in December while on the Deccan canals most of the planting is done in January, February and March. In the Surat district cane is chiefly planted in November and December.

Almost everywhere the cane takes twelve months to mature. It is a common but declining custom in the Deccan to let the canes grow a second year after the first year's crop is harvested (ratoon) and in favourable situations even three crops are taken in succession. This practice is unknown in Gujarat.

The cultivation of the ratoon crop is as follows :—The first year's canes are not pulled out but are cut clean with a hatchet close to the ground. The field is cleared of dry leaves, all rubbish is burnt and the crop is at once irrigated.

After the shoots have grown 2 to 3 feet high the field is dug up and farmyard manure is applied. The quantity of manure required for a ratoon crop is about half of what is applied to the previous year's crop. Irrigation, weeding and all other operations are the same as those required for the first year's crop.

When the cane is young its growth is slow and various quickly ripening catch crops are frequently grown during the first three months—such as maize, *guvar*, onions, cucumbers, melons and tobacco. They are not favourable to a maximum outturn of juice but are resorted to by the poorer cultivators as they give a quick return and ease the initial expenditure.

The average yield of *gul* or raw sugar from the thin varieties of cane is about 3,500 to 4,500 pounds per acre. For thick varieties under well-irrigation it is about 5,000 to 7,000 pounds per acre, and for thick canes under canal irrigation it reaches 7,000 to 11,000 pounds per acre. The outturn of sugar per acre in Bombay compares favourably with that of almost any other country in the world.

After the crop is harvested the green tops are eaten by cattle. Some or all of the crushed cane and the dry leaves are burnt as fuel to boil the juice. In Gujarat, however, the dry leaves are not so utilised and a certain quantity of *babul* (*acacia arabica*) fuel has to be purchased. In Gujarat there is a demand for dry leaves for thatching and the price realised by their sale compensates for the expenses of purchasing the *babul* fuel.

Most of the *gul* produced in Bombay is consumed locally though there is a substantial export to Central and North India.

Sugarcane is subject to the attack of several diseases the most harmful of which is the sugarcane borer. The caterpillar eats into the pith of the young shoots. The first sign is that the central leaf dries up and is easily pulled out. The borer attacks the canes soon after germination ; and it is fairly immune after three months' growth. Other pests and diseases are of minor importance, and though red rot occurs not infrequently, it has not, except perhaps in South Gujarat, been a serious menace to cultivation.

VIII.—OIL-SEEDS

The most important oil-seeds grown in this Presidency are safflower, groundnut, sesame, niger-seed, linseed, castor-seed, common mustard and rape seed. It may here be noted that cocoanut which is a fruit tree yielding oil has already been dealt with under ' fruit trees ' while safflower which yields a dye and as such is sometimes classed under that head (dyes) is treated here under oil-seeds. Similarly though large quantities of cotton seed are exported for its oil, cotton is not used extensively in the Presidency for its oil and as such it is dealt with under ' fibres.'

Of the oil-seeds noted above many supply edible oils, a few supply medical oils, while others supply lubricants and other oils required in different kinds of industries. Most oil-cakes are useful as cattle food while some of them can be used as concentrated manures.

The following table gives the uses to which the oils and bye-products of the important oil-seeds are put :—

Name of Oil-seed.	Use of		Remarks.
	Oil.	Cake.	
1. Safflower ..	Used in cookery and is said to be useful for oil-paints.	Cattle-food and manure.	Flowers of some varieties of safflower were supplying dye-ing material.
2. Sesamum ..	Used in cookery ..	Do.	
3. Groundnut ..	Used in cookery and is found useful in soap-making.	Do. ..	Kernels in the pods are eaten raw or roasted. The straw makes good cattle food.
4. Nigerseed ..	Used in cookery ..	Do. ..	Seeds are used in *chutni*.
5. Linseed ..	Used in cookery, paints and var-nishes.	Do.	
6. Castor ..	For medicinal use, for lubrica-tion and in hard soaps.	Manure.	

Most oils are also used for lamp oils though they burn slowly. Most of the oil expressed in the Presidency is consumed locally, every tract having a liking for the oil of its staple oil-seed ; only part is exported. Part of the edible cake is used as cattle food, part is used as manure and part (generally factory cake) exported. Castor cake is solely used as manure.

Safflower or Wild Saffron. *Carthamus tinctorius.* G. *Kabri, Kasambi* ; M. *Kardai* ; K. *Kusubi.*—Area in 1914-15—426,617 acres.

This crop occupies the largest acreage of all the oil-seeds in the Bombay Presidency. Out of a total area of over four lakhs of acres which stands to the credit of the oil-seed, most is found in the *rabi* portion of the Deccan *desh* tract, Ahmednagar, Sholapur, Bijapur and Poona districts claiming together about three-fourths of the total area. Next come Dharwar and Belgaum. The Konkan and Gujarat do not grow any safflower except a little in Ahmedabad.

Safflower is usually grown as a subordinate crop with *rabi jowar*, wheat and gram, though it is sometimes sown alone on the headlands as a border to the principal crop. This border answers the purpose of a fence, as stray cattle will not trespass through its thorny leaves. The safflower plants usually ripen after the principal crop. They are then uprooted or cut and heaped on the threshing floor. After three or four days' exposure the seed is beaten out with a stick. The seed under pressure (the country *ghani* or oil-mill) yields about 20 per cent. of oil which has a clear straw colour and is extensively used in cookery. Large quantities of safflower seed are also exported. The cake is used as cattle food and is also found to be a very useful concentrated manure for sugarcane on the Deccan canals. The cake has besides one advantage over other edible oil-cakes in that it keeps free of mould and good for months. The stalks and other parts of the safflower plant are of no value.

In certain villages in the Kaira district the farmers used to gather flowers of this crop, which in old times supplied an indigenous dye. But this cultivation and trade is practically dead.

Sesame or Gingelly. *Sesamum indicum.* G. *Tal* ; M. *Til* ; K. *Yellu.*—Area in 1922-23—192,692 acres.

Sesamum with a total area of about two to two and a half lakhs of acres occupies the second place among oil-seeds. It is an important oil-seed in all districts of Gujarat (except Surat where castor is the staple oil-seed). In the Deccan the crop is grown extensively in all districts except Satara though the northern districts are the most important. It is grown throughout the Karnatak but to the greatest extent in Bijapur. The Konkan areas are not extensive.

Sesamum flourishes on lighter soils. It does not stand heavy rainfall when young. In Gujarat it is sown mixed with *bajri*. In some districts in the Deccan it is sown alone though in others it is a subordinate crop. When grown as a *kharif* crop sesamum is ready for harvest in September-October ; as a *rabi* crop, it usually ripens in January. A fair average crop in the Deccan yields from 300 to 500 pounds and in Gujarat from 400 to 600 pounds per acre.

There are three varieties of sesamum commonly grown—white, red and black. The white variety is earlier and also slightly richer in oil. Sesamum cake makes very good food for cattle. The stalks are not eaten by cattle.

Large quantities of sesamum are exported to Europe. It forms, in fact, a very important export crop.

Groundnut, Earthnut or Peanut. *Arachis hypogoea.* G. *Bhoising* ; M. *Bhuimug* ; K. *Bhaimag.*—Area in 1922-23—329,679 acres.

Out of a total area of over 3 lakhs of acres which the crop occupies, nearly 85 to 90 per cent. is claimed by the Deccan. Panch Mahals in Gujarat and Belgaum in the Karnatak are the only other centres which return a fair area. Elsewhere the cultivation is trifling. In the Deccan, Satara and East Khandesh with an area of 70,000 to 80,000 acres each are the most important centres and are followed by Sholapur and Poona with 30,000 and 15,000 acres under the crop respectively. Nasik and West Khandesh grow about 10,000 acres each. The area is rapidly extending in Khandesh.

Groundnut is grown both as a *jirayat* or dry crop as well as an irrigated crop. It does well on light and medium soils. In the tract receiving more than 40 inches of rainfall, early groundnut, the seed of which is generally imported from abroad, does not require irrigation. Most of the crop grown now consists of the early foreign varieties.

" Big Japanese", ' Pondicherry ', ' Spanish Peanut ' and ' Small Japan ' are the principal foreign varieties grown in the Bombay Presidency. These were introduced by the Agricultural Department. Of these Spanish Peanut and Small Japan are the early varieties and are generally grown without irrigation. The other varieties are later though not so late as the country variety and require one or more waterings where the rainfall is scanty. Even these varieties are harvested about a month earlier than the country type and in the Satara district even Big Japanese and Pondicherry are grown as a dry crop in the western talukas.

Groundnut is a *kharif* crop and is sown with the first fall of rain. Early varieties are harvested in September and October and late ones in November and December.

The average outturn of groundnut per acre varies from 800 to 1,600 pounds of unhusked seed containing from 65 to 75 per cent. of kernels. The percentage of oil in the kernels comes to 42 to 50. From an acre of groundnut about 800 pounds of very good fodder is obtained.

Groundnut oil is used in cookery, for adulterating ghee and also as a lamp and lubricating oil. Although large quantities of groundnut are crushed locally

for this purpose and fairly large quantities are used as food, the crop forms a considerable portion of the exports in oil-seed. It is valuable in Europe for adulterating olive oil and the darker coloured inferior kinds are used for the lubrication of machinery and other purposes.

Groundnut cake is a very highly concentrated nitrogenous food and in moderate quantity is excellent for milk cattle and hard worked bullocks. It is also a very useful manure for sugarcane on the Nira and Godavari Canals.

Nigerseed. *Guizotia abyssinica.* G. *Ramtal*; M. *Khurasni, Karala*; K. *Gurellu.*—Area in 1914-15—201,798 acres.

Nigerseed occupies an area of over two lakhs of acres and is grown all over the Deccan and the Karnatak, and in the Panch Mahals. It is especially important in the Nasik district.

The crop is grown in the *kharif* season. It is sown in June or July and reaped in November or December. It succeeds well on the shallow black and light soils of the Deccan, particularly if a seasonable monsoon is followed by favourable late rains. In the Konkan, nigerseed is extensively grown on the uplands, often on poor stony land where it is in rotation with the coarse hill-millets, the last crop taken before the land is allowed to lie fallow. The crop maintains a vigorous growth on light land in poor condition if the rainfall is sufficient and timely. It is more commonly grown alone than any other of the oil-seeds. As stated above, the crop is ripe about December. It is then cut and dried in the sun. The seed is beaten out with a supple wand. The outturn per acre usually obtained is about 300 pounds. A clear, limpid, pale yellow, sweet oil is expressed from the seed and is largely used for culinary purposes. The residual oil-cake though it has a black uninviting appearance is one of the best oil-cakes for milk cattle. The cake is also found to be a good manure for the sugarcane crop in the Nasik district.

Linseed. *Linum usitatissimum.* G. *Alsi*; M. *Alsi, Javas*; K. *Agashi.*—Area in 1922-23—148,073 acres.

The total area under linseed is a little over a 100,000 acres in the Presidency. The crop is almost entirely confined to the Deccan and Karnatak. Of the total area, over 40 per cent. is claimed by Bijapur alone. Nasik, Ahmednagar and Dharwar put together make up about 40 per cent. and the remaining area is distributed among the other districts.

Linseed is sown in the *rabi* season in deep moisture-holding lands. It is generally grown alone and is the sole crop of the year. The seed is usually sown in September and the crop is ripe for harvest about February. A good crop with full even plant on deep black soil will yield about 500 pounds seed per acre; but the crop is precarious and often yields much less. Rain after sowing does usually more harm than good and cloudy weather, when the plants are in flower, interferes with fertilization. A species of rust also attacks this crop. The effect is that although the crop looks comparatively healthy at harvest time, the seed vessels are either empty or contain imperfectly filled seed. In Europe and America linseed is grown very largely as a fibre crop but this is never the case here. Here the crop is grown for its seed which supplies exclusively oil and cake. The seed is used in condiments, the oil in cookery and in paints and varnishes, and the residual oil-cake is one of the best cattle foods known, and a good manure.

Castor-seed. *Ricinus communis.* G. *Diveli*; M. *Erandi*; K. *Audla, Haralu.*—Area in 1922-23—57,893 acres.

Out of a total area of about 60,000 acres occupied by the crop nearly 95 per cent. is claimed by Gujarat, West Khandesh and Dharwar. There are perennial and annual varieties of this plant. The annual varieties grown in the Bombay Presidency are very much smaller than the perennial. The latter grow with great rapidity and a year's growth produces a tree 15 to 20 feet high. These perennial varieties are chiefly grown along irrigation water-channels, on the borders of sugarcane fields and in garden lands. Perennial castor readily escapes from cultivation and grows wild in many places. The oil extracted from the seed of this variety is darker and thicker than that obtained from the small-seeded annual kind.

The castor plant prefers a deep, free soil, of which the alluvial lands along the Tapti in Surat are typical. It is here grown mixed with *jowar, tur* and *val*. Elsewhere in Surat it is grown in garden lands mixed with groundnut. In North Gujarat castor is grown mixed with *kharif* cereals and it is also found in nearly all garden lands where it affords excellent shade for the other crops. *Rabi* castor is also taken on black soil as the sole crop of the year with *tur*, sesame, or gram and in rice beds castor and *val* or castor and gram are common second crops. The *rabi* castor is a dwarfed plant. In the Deccan and Karnatak castor is grown mixed with pulses and cereals. The *kharif* crop is usually sown in June-July and is ripe in December. The *rabi* crop which is sown in October-November generally ripens in February-March. In harvesting the crop the bunches of capsules are cut off, spread till quite dry, and the seed separated by beating with a stick. The average outturn of seed per acre may be taken at about 500 pounds. The seed yields (by the country *ghani*) about 40 per cent. of oil. Castor oil is largely used for lighting purposes, and to a considerable extent as a lubricating oil by railway companies and others. The oil is largely in demand also in soap-making and in medicine. The oil-cake is not edible but is one of the most concentrated manures known to the cultivators and is largely utilized as such in garden and sugarcane cultivation.

The stalks and the husk of the capsules of the castor-plant are of no use except for fuel.

There is a large export of castor seed from Bombay to the United Kingdom, the Continent of Europe and the United States of America.

Rape and Mustard. The areas under the two oil-seeds are not returned separately. They both occupy about 10,000 acres in the Bombay Presidency proper.

Rape. Brassica campestris. M. *Shiras*; G. *Sarsav*, is grown to a very small extent only in parts of North Gujarat. Land intended for rape is left fallow for four months and well-ploughed before the seed is sown. The crop does not require any watering. The seed is sown through drills in November and the crop is reaped in March. The average yield varies from 400 and 800 pounds per acre.

Mustard. Brassica juncea. G. *Rai*; M. *Mohri*; K. *Savive*, which is of two kinds, red and black, is either grown at any time of the year in gardens or during the cold season round fields of wheat or gram or among wheat and linseed. The leaves and green pods are eaten as vegetables. The seed is used in curries and relishes, a medicinal oil is extracted from it, and it is powdered and applied as a blister. In this Presidency mustard is utilized more as a condiment than as an oil-seed.

IX.—DYES

The only crops included under this class are (1) **Indigo.** *Indigofera tinctoria.* G. *Gali*; M. *Nil, guli*; K. *Nili*, (2) **Safflower.** *Carthamus tinctorius.* G. *Kusumbi*; M. *Kusumba*; K. *Kusubi* and (3) **Al or Morinda.** *Morinda tinctoria.* G. *Al, Sorangi*; M. *Al, Surangi*; K. *Siran, jikadi.*—Of this, safflower is now exclusively grown for its oil and not for the dye it yields. For the latter purpose it was grown in parts of Gujarat some years back, but the cultivation and trade is dead. Indigo occupies an area of only 30 to 40 acres in Khandesh and the crop is not therefore worth any note in the Bombay Presidency. In Sind, however, it is somewhat important and is dealt with in the account for the Province. *Al* or Morinda is a very minor crop hardly worthy of special mention.

X.—FIBRES

Fibres include (1) Cotton, (2) Bombay Hemp, (3) Hemp and (4) Agave.

Cotton. *Gossypium.* G. *Kapas*; M. *Kapus*; K. *Hatti.*—Area in 1922-23—3,709,141 acres.

Cotton is unquestionably the most important of the fibre crops grown in the Bombay Presidency. It occupies an area of over 35 lakhs of acres. Of this nearly nine lakhs are claimed by East Khandesh alone; Dharwar with five to six lakhs of acres under the crop and Bijapur, West Khandesh and Ahmedabad with approximately four lakhs of acres each, follow next. Broach, Surat and Belgaum with nearly two to three lakhs of acres to the credit of each, are also important centres of cultivation. The crop is comparatively of minor importance in Poona and Satara in the Deccan and is totally absent in the Konkan.

There are four distinct cotton growing tracts in the Bombay Presidency proper, each characterised by the growth of one or more agricultural varieties of the *genus Gossypium*:

(1) The Karnatak of which the Dharwar district is the chief cotton growing tract.

(2) The Deccan of which the Khandesh district grows the largest area of cotton.

(3) Southern Gujarat, in which the cultivation of cotton extends from the Ambika river to the north of Broach.

(4) Northern Gujarat, comprising the districts of Ahmedabad and Kaira.

(1) In the Dharwar district, two distinct species of cotton are grown—*Gossypium hirsutum* and a variety of *Gossypium herbaceum*. The former was introduced from America in 1829 and is known as Dharwar-American or by the cultivators '*Vilaiti hatti*', *i.e.*, foreign cotton. It is grown more especially on the lighter kinds of soil in the north-east and south-east of the district. The second species of the Dharwar district is the local indigenous variety known as Kumpta, from the port of that name, its former place of shipment, or by the cultivators '*Javari hatti*', *i.e.*, country cotton. Both species are sown in September and picking takes place in February-March.

(2) In the Deccan the agricultural variety known as '*Jari*', '*Varadi*' or '*Vilaiti*' is almost exclusively grown. It consists of a mixture of four or

more botanical varieties of *Gossypium neglectum*. As grown in the Deccan it represents a fairly low quality of staple, lower than that from Berar or the Central Provinces, but distinctly above the *desi* cotton from the United Provinces, the Punjab, or Sind.

(3) In Southern Gujarat we find typical deep black cotton soil, which, favoured by plentiful rainfall, grows the best indigenous cotton of India—the Surat-Broach variety known to the cultivators as '*Broach Deshi*'. Botanically the crop consists of a single variety of the species *Gossypium herbaceum*, though in recent years there has been much mixture with the inferior *goghari* type. It is sown at the same time as the preceding, *i.e.*, about June and is picked two months later—about February-March. In a few places, *e.g.*, at Amod and Jambusar, this variety has given way to the coarser variety already mentioned known as '*goghari*'.

(4) In Northern Gujarat, there are three agricultural varieties known as '*Lalio*', '*Wagad*' and '*Rozi*' (or *Jerria*). The first two are varieties of *Gossypium herbaceum*, the third of *Gossypium obtusifolium*. All are sown on the light soils that constitute this part of the Presidency. '*Lalio*' is sown largely under well irrigation and receives water two or three times during and after December. In '*Wagad*' the bolls open only partially and the cotton is picked while still contained in the capsule. '*Rozi*' is a perennial variety which is cut back at the end of the first season. All are sown and picked about the same time as the Surat-Broach variety.

The above-mentioned four tracts are, in the list, below, placed in the order of the quality of the cotton produced in them, the best being placed first :—

Variety or Tract.	Texture of Soil.	Annual Rainfall.
		Inches.
A. The Surti-Broach or South Gujarat Tract ..	Black clay ..	33
B. The Karnatak Tract	Do. ..	23
C. The Ahmedabad-Kaira or North Gujarat Tract.	Sandy ..	28
D. The Deccan Tract	Black clay ..	20—25

The conditions of soil and rainfall in each of the above tracts differ from those in the other and the tracts are more or less rigidly defined by the combined character of these two factors. The variety of cotton grown in any one of the tracts is special to that tract and in general is the best of existing types that can be cultivated in it and though this type can often be improved, it can seldom be supplanted.

It will be seen that first class cotton will, apart from irrigation, only be produced in the tract where the rainfall is good in amount and distribution and where the soil is sufficiently retentive. If one of these factors falls short of the standard the quality of cotton will deteriorate. The classification of the various tracts made above will now be rightly understood. Thus, the Surti-Broach tract has ample rainfall for the crop—of 33 to 45 inches—and a very retentive soil, and can hence support our best indigenous cotton. The Karnatak tract has a black retentive soil but the rainfall being smaller—varying from 23 to 34 inches—the quality of cotton, though good, is second to Surti-Broach. The Ahmedabad-Kaira or North Gujarat tract has a rainfall of 28 to 37 inches but owing to a lighter soil and a worse distribution this is less effective than the smaller rainfall of the Karnatak tract and this (North Gujarat) tract cannot produce an annual cotton equal in quality to the two former tracts. The Deccan tract with soil varying from a light to a thin black clay and a rainfall of 20 to 30 inches all falling within 4½ months can produce either a coarse cotton or if a fine one, with only a comparatively small ginning percentage.

Of the total area under cotton about 60 per cent. grows short stapled ($\frac{1}{2}$" to $\frac{5}{8}$") and 40 per cent. long stapled ($\frac{5}{8}$" to 1") varieties. The following table gives the commercial types, varieties, length of fibre (staple) and the ginning percentages of the cottons grown in the Presidency :—

Variety.	Tract where chiefly grown.	Sub-class or Sub-variety.	Staple in inches.	Ginning per cent.
Dholeras ..	North Gujarat ..	Wagad ..	6-8 to 7-8	33
		Lalio ..	5-8 to 6-8	33
	Kathiawar ..	Goghari ..	4-8 to 5-8	40
		Mathio ..	4-8 to 5-8	32
Broach ..	South Gujarat ..	Navsari ..	7-8 to 1	31
		Surat ..	7-8	32
		Broach ..	5-8 to 6-8	32
		Kanvi ..	4-8 to 6-8	35
Kumta-Dharwar ..	Karnatak ..	Kumta ..	7-8	26
		Dharwar-American ..	6-8 to 7-8	30
Oomras	Deccan and part of Bijapur ..	Khandesh ..	4-8 to 5-8	38

So much with regard to the quality and varieties of cotton. With regard to its cultivation it may be noted that cotton is a *jirayat* or dry crop though in Ahmedabad and in Kaira it occasionally gets irrigation. With cotton, there is often a slight sprinkling of *ambadi*, *jowar*, castor, etc. Cotton is rotated with *jowar* in heavy soils and with *bajri* in light soils. But the rotation is modified according to the district, season and the condition of the fields. Wheat is grown extensively in the cotton-soils of Ahmedabad, *lang* in Broach, *tur* and sesame generally in these and other districts. In Broach inferior rice is grown with cotton in separate rows chiefly in fields that have been kept fallow during the previous year. Cotton is generally sown immediately after the first fall of rain in the Deccan and Gujarat. The seed is sometimes sown before the break of the monsoon in anticipation of rain. In the Karnatak, which receives the north-east monsoon, the seed is sown in September, as, if sown earlier, the lint would be ruined by the late rains. Cotton seedlings are easily injured by heavy rains and the fields have then to be re-sown. As already stated, different varieties take different periods for maturing. The outturn also varies according to variety, soil, rainfall and care bestowed on the crop. On an average this Presidency produces 300 pounds of seed cotton per acre or 100 pounds of lint and 200 pounds of seed, but the variations from district to district are very great.

Like other crops, cotton is also subject to mishaps. Cloudy weather causes shedding of flowers; untimely showers considerably deteriorate the quality of the lint, moth borer causes the death of many plants, boll worms (chiefly the spotted boll worm) eat the foliage and flower buds on the young plants and bore into the young bolls at a later stage. But with all this, cotton is a favourite crop with the cultivators. It is grown easily. It is not subject to diseases which totally destroy the crop. Above all it can be converted into cash as soon as the fields are picked. There is no threshing or delay of any kind and there is always a ready sale for it in the market.

Bombay stands first among the provinces of India as a grower of cotton. Cotton occupies, in fact, the third place among its crops in acreage, higher than rice and wheat, and claims about 15 to 20 per cent. of the gross cropped area.

San, Bombay Hemp. *Crotolaria juncea.* G. *San*; M. *San*, *Tag*; K. *Sanbu.*—Area in 1914-15, 31,380 acres.

The total area in the Bombay Presidency under this fibre plant is about 25,000 to 30,000 acres annually. The crop is sparingly grown in all districts, the most important centres of cultivation being Ahmedabad, Panch Mahals, Surat, Khandesh, Nasik, Satara, Belgaum, Thana and Ratnagiri. The fibre obtained from the plant is made into ropes for farm use or by fishermen in the coast villages for making nets.

San is grown mainly for three purposes in the Presidency, *viz.*, (1) for its fibre, (2) as a fuel for *gul* or raw sugar making and (3) as a green manure.

In the western part of the Satara district and the Kolhapur State, with a rainfall of about 40 inches, it is grown for fibre as follows :—Sowing takes place in August when the heaviest rain is over. The seed germinates rapidly. No further cultivation or weeding is required, for the rapid growth of the crop suppresses all weeds. The seed ripens in about 4½ to 5 months. The stalks are uprooted, exposed for a few days and retted at leisure.

In Nasik, Khandesh and Surat *san* is cut before it forms seed and retted at once. In Gujarat the crop when intended for fibre is broadcasted in June, but when seed is the object, it is sown in November after rice has been harvested. In the Thana and Ratnagiri districts *san* grown for fibre is sown in the autumn after the rice harvest in such fields as still retain moisture. 325 to 650 pounds of fibre and 400 to 600 pounds of seed is a fairly normal outturn.

In the south of the Satara district and in the Kolhapur, Sangli and Miraj States people depend much on *san* to supplement their fuel supply for *gul* making and burn the stalks sometimes after extracting the fibre but often entire stalks and all; and occasionally without removing even the seed. Cultivation of *san* works very well with the sugarcane cultivation of this tract and it is common to seed a patch of sugarcane and a patch of *san* alongside of each well. The *san* provides fuel for boiling down the juice of the sugarcane and at the same time provides a good seed-bed for the new crop of cane which is planted as soon as the old one is removed. The cultivation is similar to that previously mentioned. The crop is usually ripe for harvest in four to five months. The use of *san* as a fuel is now decreasing owing to the introduction of more effective furnace for boiling sugarcane juice.

When grown for green manuring, for which *san* is an ideal crop yielding 18,000 to 28,000 pounds of green matter per acre and growing very rapidly, the seed is sown as soon as the ground is made wet by the rains. The crop comes up thick, smothers the weeds and so no more tillage is necessary. It is ready for ploughing in after 2 to 2½ months when it is three to four feet high and just as the crop begins to flower. If a cold weather crop is to be sown the

ploughing in has to be done earlier, *i.e.*, when *san* is about six weeks old, during a favourable break in the weather. A heavy log roller is first drawn over the crop to level it. The crop is then ploughed in and the field left undisturbed until the *san* has decayed.

When grown for fibre the crop takes about 4½ months to mature. When ripe the plants are uprooted by hand, tied into bundles and left exposed for a few days. The leaves and seeds are easily removed by light beating. The threshed bundles are tied about fifty together into a big bundle and steeped in a *nala* (water channel) for five or six days. The bark with fibre is then easily separated by hand. The fibre is then cleaned out by beating these strips with a stick and threshing in the waters of the stream. An acre of *san* yields about 500 pounds of clean fibre. If the *san* is harvested late, not only a stronger fibre is obtained but it also yields seed for sowing and *bhusa* for cattle.

Hemp, Deccan Hemp or Ambadi. *Hibiscus cannabinus.* G. *Sheria*; M. *Ambadi*; K. *Pundi*.—Area in 1914-15, 124,322 acres.

The Bombay statistical returns show an area of over 100,000 acres annually under the crop. It is a well-known crop in all districts but is most important in the Deccan and Karnatak. There is a sprinkling of *ambadi* in almost every *bajri* field in the Deccan and in Northern Gujarat. It is also grown subordinate to *jowar* not so much in pure black soil as in soils of lighter description. It grows best on the alluvial soils of Northern Gujarat but does very well in medium black soils in the Deccan. It is always a rains crop and is rarely grown alone. The tillage is the same as that of the other crop with which it is associated. The plants ripen in October-November and are uprooted, dried in the sun for a few days and tied into small bundles. The leaves and capsules are separated by beating the bundles smartly on a log or board after they are thoroughly dry. The seed is separated from the capsules by beating with a stick and cleaned by winnowing in the usual way. The small dry bundles of *ambadi* are tied into large bundles. These in the hot weather are steeped in water and weighted down with stones for ten days. When removed, the bark and fibre readily peels off from the root upwards and is cleaned and prepared for market. If the fibre is separated in the cold weather, longer steeping is required. The strips or ribbons also break off irregularly.

The fibre is largely used by cultivators for their home requirements such as well and cart ropes, plough draft ropes, halters for cattle, etc. The sour young leaves of *ambadi* are used as vegetables.

A crop grown alone under favourable circumstanees yields about 1,000 pounds of fibre per acre.

Agave. Agave is a fibre crop which has been but little exploited in the Bombay Presidency. Here the plant is still planted more for hedge purposes than for fibre extraction. In the Karnatak it is the chief hedge plant along railway lines. It grows well near water courses and this habit of the plant is put to profitable account by using it as a hedge along the boundaries of fields which are subject to a rush of water. In such places it is planted close with a view to allow water only to pass through the hedge while the silt is retained. On the Deccan Canals this plant is largely used to provide a hedge for the protection of banks, trees and other canal property. The species used are not those giving the strongest or most valuable fibre. The fibre from all these sources is obtained by cutting the leaves, once a year, and retting them after slitting into small strips. The fibre thus obtained is used for making the ropes used for farm purposes, and hardly enters into general commerce.

FODDER

The growing of grass specially and only for the sake of their fodder value is almost a new thing in the Bombay Presidency. Large amounts of fodder for cattle and other animals have, of course, always been grown but they have been, as it were, a side issue in the growing of grain or other crops. In recent years, however, the matter has taken a new aspect. There is on the one hand a very large demand for fodder from the big centres of population which has led to the extensive growing of such crops as lucerne and fodder *jowar*. On the other hand, it is increasingly recognised that an animal which is heavily worked or is giving much milk must be substantially fed, and that hence special fodder crops may be necessary. An interest in the growth of purely fodder crops is therefore rising.

The area devoted to these crops in the various districts of the Bombay Presidency is, however, still very small and is most largely made up of *jowar* in the hot weather, of lucerne, of guinea grass to a small extent, and of *jowar* in the rains. This area is, however, rapidly increasing as the following figures will show :—

Average of the quinquennium ending	1915-16 ..	Acreage under fodder crops in the Bombay Presidency excluding Sind	85,828
	1920-21 ..		135,402
	1921-22 ..		171,650

From the above it will be seen that the area is increasing very rapidly from one quinquennium to another.

In the present summary only such crops as have been found to be suitable as fodder crops in one or other part of the Presidency and under one or other form of soil, climatic condition, etc., have been dealt with. There may, of course, be many others which may be suitable for the purpose but they are not either known fully or investigated and tried to any extent as would justify any definite statement being made about them.

In spite of an increase in the area and number of different crops grown for their fodder in the Presidency, cereals and pulses still form by far the greatest source of supply of fodder obtained annually in this Presidency and as such they deserve a prior treatment to others.

We will now consider the fodder crops hitherto used in the Presidency and how they respond to the demands for fodder crops.

I.—Jowar or Sorghum. Of all the plants grown in the world for the production of fodder, *jowar* (*Andropogon Sorghum*) probably stands first in being capable under a great variety of conditions of producing a very large quantity of palatable fodder in a minimum of time and under fairly dry conditions. It exists in many varieties which, in regard to their demands in the matter of temperature and water suitable for fodder production, differ considerably and it will be well to consider the varieties which are available in the Presidency with their characteristics.

(1) *Sundhia Jowar.—Sundhia* is an ideal fodder crop for the rains and for the hot weather on the alluvial soil of North Gujarat. It is not suitable for sowing after the end of August, when some other variety like *shalu* would probably be preferable. In Southern Gujarat, on black soil, what little experience with *Sundhia* has been available, has shown that it does fairly well as a rains crop. The yield is, however, very much smaller than in the lighter soil and lighter rainfall of Northern Gujarat. In the Deccan, on medium black soil, *Sundhia* has been found to be the best fodder crop, in ordinary seasons, on well-tilled, well-manured land when grown as a rains crop. It is, however, susceptible to drought or to excess of water and is not suitable as a hot weather irrigated crop or as a cold weather crop, nor on light and poor land. *Sundhia* usually flowers and is fit for cutting in about sixty days.

(2) *Nilwa*, another variety of *jowar*, gives a fodder twenty per cent. less valuable than *Sundhia* but gives a larger yield. It is less susceptible to drought or to excess of water and is the best variety on light poorer soil. It is not suited for planting after August and is not the best as a hot weather irrigated crop. It generally flowers and is fit for cutting in seventy to seventy-five days.

(3) *Amber*, (4) *Collier* and (5) *Imphi*, the first two of which are varieties of American sorghum and the last an African sugar sorghum, lie between *Sundhia* and *Nilwa* in point of yield. With deficient rainfall or on light poor soil they are not so good as *Nilwa*. They give a fodder nearly as good as *Sundhia*. They are not suitable as hot weather irrigated crops or as cold weather crops. They usually flower and are fit for cutting in about the same time as *Nilwa*.

(6) *Utavli.*—This is a variety of *jowar* which gives a fodder very similar to *Nilwa* but it flowers and is ready for cutting after about sixty-five days. It is a little better than *Sundhia* in point of yield but inferior to *Nilwa*. The fodder is only equal to *Nilwa* in value. The peculiar value of *Utavli* is that it yields heavily when planted in August, when irrigation has to be used. It is not suitable for hot weather irrigation.

(7) *Hundi* and (8) *Kalbondi.*—These varieties give coarse fodder and grow even more slowly than *Nilwa* coming to flower in eighty days. They are not suitable for growing in the rains but are the best for the hot weather under irrigation.

(9) *Shalu.—Shalu jowars* are of various kinds and are the only ones suitable for cold weather growing, after September, under irrigation. They yield, however, much less fodder than those previously indicated.

In the Bombay Karnatak the conclusions reached in the Deccan seem to apply in the larger part of the Belgaum district. In Dharwar, none of the *jowars* above mentioned can be recommended as a rule in comparison with the local "Fulgar yellow" or similar crops in the rains. This grows more slowly than *Sundhia* or even *Nilwa* but will give a very high yield on good well-tilled, well-manured land.

In the Konkan, few experiments have been made but the American Sorghums seem to grow and yield well on *Kurayat* or sloping hill side lands, in the rains.

On an average, on good well-tilled, well-manured lands, the varieties noted above will yield an amount of *dry* fodder per acre as follows :—

	lbs.
Sundhia	9,000
Nilwa	13,000

	lbs.
Amber	11,000
Collier	
Imphi	
Utavli	10,000
Hundi	11,000
Kalbondi	
Shalu	4,000
Fulgar yellow	10,000

The yield will of course vary with soils, tillage, manure, season, etc., but they may be taken to be fairly average yields under favourable circumstances.

There remain a few points to be mentioned in connection with *jowar* as a whole.

(*a*) *Poisonous Character of young jowar plants.*—The use of *jowar* is affected by one great difficulty. The plant cannot be cut and used as fodder until the flowering stage, owing to its being very poisonous to stock in its earlier stages. Whenever grown therefore, it must be kept till it flowers before using it, as even when dried, there seems a good deal of doubt as to whether it does not still contain some of the poisonous principles. The lack of knowledge of the fact has led to the loss of many a valuable animal.

(*b*) *Diseases and pests of jowar.*—The growing of *jowar* for fodder in this Presidency is beset by several difficulties in the way of diseases and pests, two of which are decidedly serious. Of these the first is the growth of the *tahuli* weed (*striga*) and the other is the *jowar* borer.

(*i*) The *tahuli* weed termed *agio* in Gujarat adapts itself very easily to growth on the roots of the *jowar* plant and draws all its nourishment from them with the result that the *jowar* plant never develops well but remains quite stunted. Prompt uprooting and burning of the weed seems the only effective remedy at hand.

(*ii*) *Jowar* borer.—This is a caterpillar very similar to (though distinct from) that which does so much damage as the borer of sugarcane. The caterpillars attack the stems. The smaller plants die easily while the vigorous ones are stunted. The crop is naturally very uneven. Immediate removal of the diseased plants, proper rotation, burning of previous year's stubbles, etc., are the only means of check as the pest does not lend itself at all easily to direct attack with insecticides, or other similar means.

(*c*) *Utilisation of jowar fodder.*—As with almost all fodders there are three ways of utilising the crop, (1) by green soiling, (2) by making into hay, (3) by making into silage.

(*i*) Green soiling or cutting the crop in the field as required and feeding green to stock is the usual way of utilising the crop and indeed the only method of employing the crop grown in the hot weather. To avoid wastage the best plan would be to chaff well the material before it is given to cattle.

(*ii*) *Making into hay.*—The question of making hay from *jowar* fodder does not usually arise in connection with the crop grown during the hot weather, which is grown for immediate use. The crop grown during the rains is likewise not produced at such a time of the year as is favourable to the production of hay. Over nearly all the districts of the Presidency, the crop sown in June or July is ready for cutting,while the weather is still extremely uncertain. Much of the *rabi* crop is however made into hay by perfectly drying in the sun and stored.

(*iii*) *Making into silage.*—The making of silage is such a new thing in this Presidency that there are very few local data available. *Jowar* has, however, been sufficiently used to make it certain that under our conditions, it is very satisfactory for this purpose.

II.—Maize. As a producer of fodder, maize probably stands only second to *jowar* among the crops of the world and it may even be doubted whether it is not in many cases considerably its superior. It produces almost as much good fodder per acre as *jowar*. It can be safely grown over a larger range of area than its rival and it can be fed at any state of its growth far more safely than is the case with *jowar*.

In the Bombay Presidency, the cultivation of maize has not extended so widely as one would have expected, while two-thirds of the total area is in one district, the Panch Mahals. But enough is grown to show that maize, at any rate for fodder will flourish in almost any part of the Presidency and that, given suitable soil there need be no fear of planting it as a fodder crop, whenever water is available either from natural or artificial sources.

Maize grown on medium black, well manured lands, in the rains, without irrigation, has been found to yield about 10,000 lbs. of dry fodder per acre which is just about equal to the yield of *jowar* under similar conditions.

Maize has the great advantage over most types of *jowar* that it can be grown in the Deccan at almost any part of the year provided irrigation is given. The yield is, of course, usually smaller but the fodder is correspondingly more valuable.

During the famine of 1918-19 in the Deccan, maize proved its extreme value as a fodder crop to be sown any time from September on to December. Sown in September, it did generally better than any crop and grew well with irrigation on land which had been quite dry in contrast with *shalu jowar* which generally failed under similar conditions. It is now known that maize will grow very well as a fodder crop in most other parts of the Presidency including Gujarat and the Konkan.

Maize grows very rapidly and has one advantage over all the *jowars*, namely, that it can be fed to stock at any period of its growth.

The poison of young *jowar* fodder or any other poison, has never been detected in the plant even after a number of careful experiments.

In the Bombay Presidency, the maize crop grown for fodder in the few cases when it is so grown is usually cut in the field and fed green to stock direct. When grown in the hot weather it is the only way of using it. It is not here usually made into hay that is to say, cut when in the dough stage, dried in the field and stacked. When there is no chance of making silage, however, very satisfactory feed can be produced by this method. But if maize is to be kept, the ideal method of keeping it is the silo. Unfortunately, however, this method is very rarely, if at all, practised in this Presidency, though what few experiments have been carried on in the matter, have proved beyond doubt that maize, if made into silage, gives a splendid fodder for the long dry weather of the Presidency, that it loses very little of its digestibility and that it is eaten greedily by stock.

From what has been said above it will be seen that maize is an almost ideal fodder crop. It is probably the best emergency fodder crop to grow when the rain fails, as is so often the case in this Presidency and when famine is imminent. It is one of the most tolerant of fodder crops so far as climatic conditions are concerned. It grows quickly, yields heavily, requires little water considering the yield of fodder which it gives, and unlike *jowar* it can be fed to stock at any stage without danger.

III.—Bajri, Rice, Wheat and Ragi. Except for *Jowar*, *Bajri* (*Pennisetum typhoidem*), Rice, Wheat and *Ragi* (*Eleusine, Coracana*) are the chief grain crops in the Bombay Presidency and incidentally produce a very large amount of fodder, as the straw remaining after the removal of the grain is much used for feeding stock. In this form, though widely employed, the straw of all of them is looked upon as considerably inferior to the *kadbi* or straw of *jowar*. As none of these crops is ever cultivated to any extent purely as a fodder crop, they will not be considered in this summary.

IV.—Kang or Rala. *Kang* or *Rala* (*Setaria italica*) or fox tail millet, though only a minor grain crop in the Presidency, has certain advantages as a fodder crop and is occasionally grown as such in Gujarat. Its principal advantage is that it will give a very rapid crop of fodder say in about six weeks, that it will grow most successfully in the hot weather and that it gives material very palatable to animals. It thus has a special value as a catch crop when the time is not long enough to grow the more heavy yielding crops. Whenever grown in this Presidency in the past it has been for feeding green to stock and it has not been used for making hay or for silage. Elsewhere it is found to yield good hay if cut just before blooming. For silage making it is not very good but gives nevertheless a product which animals eat greedily.

V.—Vari, Sava or Cheno (*Panicum Miliaceum, etc.*). These crops are chiefly cultivated as an inferior grain crop largely on the poor lands with higher rainfall below the Western Ghats, and in the *Dang* country. As an essential fodder crop it is at present only grown in Gujarat, chiefly in garden land and as a hot weather irrigated crop. The cultivation of *cheno* in Gujarat is popular because it thrives well in the hot weather. It then provides excellent fodder in considerable quantity at a season when fodder is scarce. The cultivator of garden land is, in the hot weather and at the beginning of the rains, often hard pressed for fodder for his cattle, because his energies are chiefly directed to producing market garden crops which, though very valuable, do not help him to feed the cattle which he requires for tillage and irrigation. *Cheno* is usually sown at the end of January. Light irrigation is given as required. The crop flowers about March and is cut green for immediate requirements. On fairly rich land six to seven thousand pounds per acre of green fodder are secured. *Cheno* ranks high as an emergency fodder suitable for the hot weather and grows even more quickly than *kang* or *rala*. As a fodder, however, it is not so desirable as *kang* being more woody and less leafy than the latter.

VI.—Sawan (*Panicum frumentaceum*) **and Banti** (*Panicum crus-galli*). These are very rarely grown as fodder crops in this Presidency. The experience on the Government Grass Farms is, however, that when sown

in the monsoon and cut in August these crops make excellent fodder especially for milch cattle and can be either used at that time as green fodder or converted into silage. In Northern Gujarat experiments with the crops have shown that the yield is highest when sown in February, March and April and the superior value of the crops in the hot weather is thus made quite clear. It is not easy to convert these crops into hay as the stems are decidedly thick. They have been found good for silage but are probably best used for feeding green.

VII.—Chavli or cow pea and other pulse crops. *Chavli* and the other pulses like *val*, *mug*, *udid*, etc., though grown considerably for their seed in the Bombay Presidency, are only dealt with in this summary so far as their utility as fodder crops is concerned.

When a search began in this Presidency for suitable fodder crops some twenty years back *chavli* early attracted attention and was found to furnish a good quality and quantity of fodder.

Apparently almost any soil will suit *chavli* but a good deep soil answers best especially if moderately light in texture. The seed is either sown in February for hot weather irrigated cultivation or at the commencement of June after the first rains have fallen, for cultivation in the rains. The crop takes about two and a half months or a little more to mature for cutting. Cutting should take place when the pods are well-formed, but are still green, and the crop can be fed green or be allowed to dry into hay. Under favourable conditions the plants will sprout again and give a second crop of fodder but as a rule the second crop so obtained is a very small one. When grown under irrigation, the outturn of green fodder obtained for a good crop may amount to 12,000 to 16,000 lbs. per acre. If grown in the rains the yield will be less and not usually more than 10,000 lbs. per acre.

If grown in the hot weather with irrigation the crop is always fed green. At that time of the year green fodder over the whole of the Presidency is so valuable that there would never be any question of converting it into hay. The crop grown in the rains is in a different case. It is ready for cutting in September and at that time green fodder is abundant. If the weather is suitable, hay may be made though the crop is somewhat difficult to cure owing to the thickness of the stems and the succulence of the leaves. The cut crop must not, hence, be heaped together too soon, as it is then likely to become mouldy and when nearly dry it must not be knocked about too much or the leaves are likely to be knocked off. We have no experience of the crop for silage but elsewhere it has been found excellent for the purpose.

Chavli also forms an excellent mixture with either fodder *jowar* or *bajri* grown for fodder and owing to its more or less twining habit it becomes thoroughly mixed with the *jowar* or *bajri* and considerably increases the feeding value of the crop. From experiments with various pulses (*val*, *mug*, *kulthi*, etc.) *chavli* was found to be the best for mixing with fodder *jowar* on medium or heavy soils. It gave the biggest yield of any of them.

It will be seen from what has been said above that *chavli* is one of the most valuable leguminous fodder crops we have for all kinds of stock. It is rich in proteids in particular. There is practically no waste in feeding *chavli* fodder. Even when it is a little mouldy it is eaten freely by stock of every kind and this is of course a great advantage. Altogether it would seem that *chavli* is likely to fill a large place in the fodder supply of the Bombay Presidency as a crop of exceeding high feeding value, easy to grow, and which stands ahead of all other known annual leguminous fodders for growing in the hot weather under irrigation or in the rainy season. In addition to these advantages the long tap root of the plant penetrates the subsoil loosening it and making it more porous, and the residue left in the soil after cultivation is always sufficient to produce considerable improvement in the land. It is a good soil improver as well as a good fodder crop.

VIII.—Val (*Dolichos lablab*). The present position generally is that in the Bombay Presidency, *val* can be relied upon to give a crop of 7,000 to 8,000 pounds of green fodder in the rains or in the *rabi* season with irrigation. For the latter purpose it will do better than any other. *Val* seems to prefer a medium or stiff soil. Grown in the *rabi* season for which it is most suitable in the greater part of the Bombay Presidency, it does not need irrigation if the water level is not far from the surface but if a large yield of fodder is wanted, irrigation will, in nearly all cases, be of advantage. The crop is cut when the beans are formed and this is about two and a half to three months after sowing. It must be cut at an early stage as, after the crop begins to ripen, the leaves get very brittle and fall off at the lightest touch. Hence it should be generally fed green and is not suitable for making into hay. Grown as a *rabi* crop, by the time it is ready, green fodder has begun to be scarce over most of the Presidency and *val* is particularly valuable at that time. Its power of giving more than one cutting is of considerable value and enables it to produce a larger yield than otherwise would be the case.

Val can be grown as a subordinate crop with fodder *jowar* or fodder maize just like *chavli* and with equal success. It has the advantage, owing to its very twining character, of giving a more completely mixed fodder when the combined crop is cut.

From all experiments so far, *val* is found to be at least equal as a fodder to *chavli* if anything, being superior to it. The fodder is, on the whole, finer and less inclined to be coarse. The leaves are, however, more likely to fall in the course of reaping and hence (as already noted) it ought to be reaped at an earlier stage than *chavli* and so the highly nitrogenous seeds cannot have the same chance of developing. The fodder can be fed without any waste and has proved suitable for all kinds of stock.

IX.—Kulthi (*Dolichos biflorus*). The best leguminous crop for fodder purposes on light land in the rainy season is *kulthi* which though at present only grown to a small extent for this purpose is nevertheless very largely cultivated as a mixed crop with grain crops for the sake of its seed almost all over the Bombay Presidency.

As a fodder crop attention has been attracted to *kulthi* for a long time especially on account of its drought resisting capacity and hence its suitability for growing on sandy and shallow lands during the rainy season. Even if there is a long break in the rains it does not affect *kulthi*. Though the principal crop of *kulthi* will be in the rains, repeated crops can be taken off the same land without difficulty, if the necessary irrigation can be arranged. It may, with light irrigation or one shower to start with, follow a *rabi* crop and so furnish green fodder in the hot weather at the least expenditure of water. Most of the *kulthi* grown in this Presidency is now grown in admixture with *bajri* and the system gives a very good mixed fodder. When grown alone, the yield amounts to about 8,000 lbs. of green fodder per acre.

Kulthi fodder is very good in quality. If the plants are cut when in flower it is excellent for all farm animals and especially in mixtures is considered as particularly good for milk animals.

X.—Udid, Mug and Math or Matki. *Udid* (*Phaseolus mungo var radiatus*), *Mug* (*Phaseolus mungo*) and *Math* or *Matki* (*Phaseolus aconitifolius*) are very extensively cultivated in the Bombay Presidency for their seed. They give under these conditions stalks which make excellent fodder, but as purely fodder crops there do not seem any conditions under which they are likely to compete with *chavli*. In any case they are grown at the same time of the year and on similar soils to *chavli*. The outturn of green fodder obtained from them is considerably inferior to both of *val* and *chavli*. In land not well drained they are liable to die off completely in the rains. The crops are not also able to give a second cutting. On the whole it cannot be said that either of them affords much promise as a fodder crop in this Presidency. All that they can give will be given better by *chavli*.

XI.—Peas. The ordinary field pea (*Pisum sativum*) is, when grown separately, of little use as a fodder crop. It only gives a comparatively small yield when grown in the cold weather, and if grown in the rainy season the plants will mildew and only give an insignificant return. At the same time it is generally recognised throughout the Presidency and in Northern India that the plant furnishes very valuable fodder and is one which grows very well indeed in mixture with other crops and particularly with oats. As a result, while one may say that peas alone are never grown for fodder purposes, oats and peas grown together have become one of the standard sources of fodder round cantonments, in dairies and other similar places where such crops have been grown.

Peas and oats are essentially a *rabi* crop. The land best suited to growing this combination is well manured, deep, moist soil and the crop grows best in the height of the cold weather. In average black soil, irrigation will be required at intervals of about ten days after the crop has begun to grow, but the amount will vary with the character of the land. The crop is as a rule ready for cutting about 2½ months after seeding and should be harvested when the oats are in the milk stage and the peas are forming pods. If continuous green feed is needed this can be obtained by seeding several plots at intervals of a few days from October to December.

The yield of the mixed crop is very variable, but generally with a well grown crop it ranges between ten to twenty thousand pounds of green fodder per acre.

It has been customary to feed the crop green, but it makes excellent hay and at the time of the year when it is ready it can be made into hay without any difficulty. The fodder is said to exert a very favourable influence on the quality of milk. Peas are hence a crop worthy of much consideration for the *rabi* season by all those who are growing crops for dairy cattle.

Peas are sometimes grown as a mixed crop with *khapli* wheat, but the methods followed and the yield obtained do not differ appreciably from those already indicated for peas and oats.

XII.—Methi or Fenugreek (*Trigonella Fœnumgræcum*). The fact that the growth of *methi* as a purely fodder crop has existed and still continues in certain parts of the Presidency, more particularly in the districts of Nasik and West Khandesh, is a very interesting one and would seem to show that the crop has special and peculiar advantages as a fodder crop. Of course, the crop is far more generally grown either for its seed or as a green vegetable, but it is dealt with here purely as a fodder crop.

Methi is grown, as already stated, as a fodder crop to an appreciable extent in Nasik and Khandesh districts.

It is either grown under well or canal irrigation. *Methi* fodder is the mainstay of the work bullocks during the hot weather in many parts of these districts and most of the people cultivating under well irrigation devote about one-fifth of the area to the growth of this crop.

The soil used for the purpose is a well-drained medium black soil with *murum* underlying it. If grown on lighter and poorer soils more irrigation water is needed and less succulent fodder is obtained. The seed is sown from October to February, the coldest weather being supposed to give the best results. Generally six waterings are needed, till the crop is ready for being used as fodder. The crop is reaped when nearly three months old, the plants being uprooted. The reaping continues for three to four weeks according to the requirements of the farm animals or the market. It is always fed green and on an ordinary cultivator's holding is pulled up for the bullocks each day for the midday feed. The yield of *methi* fodder obtained is about eight to ten thousand pounds of green fodder per acre and an acre will feed eight bullocks (one meal a day) for three to four weeks.

On the whole, it would seem that *methi* is well worth attention as a cold weather irrigated fodder crop capable of being grown well on into the hot weather. It is not expensive to grow and it yields a fairly heavy crop of good succulent fodder.

XIII.—Guar or Cluster Bean (*Cyamopsis psoralioides*). *Guar* possesses considerable advantages in certain cases such as (1) that it is very drought resistant and hence will give a good crop with very little water in irrigated tracts; (2) that it is particularly suitable for light sandy soils; (3) that the plant is an upright growing plant, which hence has a number of advantages over the twining, creeping, climbing pulses already dealt with; and (4) the fodder produced is relished by animals. Its disadvantages are that it grows comparatively slowly and will not grow well on black cotton soil. In fact in *guar* we have a crop essentially suited to sandy or alluvial soils. It is particularly suitable for growing in the rainy season, being sown at the beginning of the rains and cut when in flower or when the pods are beginning to form. It will usually be ready at the end of August if planted early in June. Under suitable conditions, about 12,000 lbs. of green fodder per acre may be expected. All over local experiments agree that green *guar* is an excellent fodder and is relished by all our agricultural animals. When green, it is very free from fibre. Hitherto it has always been fed green here when grown as a fodder crop and there seems no experience as to its value for hay making or for silage.

XIV.—Sann Hemp (*Crotolaria juncea*). In the south of the Bombay Presidency young sann hemp plants are often cut for feeding to stock, the crop being afterwards allowed to grow for fibre. And inasmuch as this crop produces a very large amount of green matter per acre it was tried at Poona, definitely for fodder in two seasons successively. It was, however, found that sann hemp if allowed to grow long enough to produce a large crop was uneatable; if cut when young enough to eat, it gave an altogether inadequate crop and even then was not a good fodder. This is the Poona experience, but on the other hand in somewhat similar conditions it has yielded well and is considered as of considerable value as an irrigated fodder crop in the hot weather. It is evidently well worth further trial in this direction.

XV.—Lucerne (*Medicago sativa*). Perhaps the most important leguminous fodder crop in the world and certainly the one which occupies this position in the drier parts of almost every continent is lucerne. This crop stands unique in being able, under a very large variety of conditions, to produce a continual succession of cuttings of very rich fodder, while being unaffected by all but the most extreme heat and by cold down to the freezing point, and by being able to grow in almost any soil in which it has been tried in the Bombay Presidency. Small patches of lucerne are now found in cultivator's fields in many, if not in most, of the well-irrigated villages in the Deccan and Gujarat. It was planted very largely during the famine of 1918-19. While fairly resistant to extremes of heat and cold in a dry region lucerne is very delicate under conditions of moderately high temperature accompanied by a moist climate. In regions below the Western Ghats with a high rainfall—the Konkan including the greater part of Thana—lucerne is a failure as a permanent crop. It always becomes unhealthy and generally dies in the rainy season. In this part of the country, if grown at all, it must be as an annual crop after the rains are over.

Experience has shown that lucerne will flourish on practically any soil in the Bombay Presidency provided it is not waterlogged, provided it is not highly charged with salts and provided water is available in sufficient abundance. Undoubtedly, the best conditions are shown, however, by a deep loose soil. The best time for sowing in this Presidency is either June or from October to December though possibly sowing a little earlier than October is satisfactory in districts with light well-drained soil. It seems certain that if lucerne is to succeed, it must be well established before the hot weather.

The lucerne having been sown, it needs laborious weeding, heavy manuring, frequent and copious watering and timely cutting, to get the best results.

(1) *Weeding.*—The need of weeding commences almost at once for the young lucerne plants as they have little power of smothering weeds and deep rooted grasses very quickly kill out the lucerne. Laborious weeding is hence essential.

(2) *Manuring.*—If lucerne is to be a really paying crop it must be regularly and heavily manured. Farmyard manure, castor cake, crushed bones and some others have been found quite suitable but the crop is found to do particularly well under applications of sewage either raw or passed through the septic tank process.

(3) *Watering.*—With regard to the amount of irrigation water necessary and the frequency with which it ought to be given, no definite rules can be laid down and judgment must be made by the condition of soil, of rainfall,—both as regards amount and distribution, and of the crop.

Planted in October, lucerne will be ready to give a crop, under favourable conditions, two months later. The right stage when lucerne should be cut, is when about one quarter of the plants are in bloom. If cut too soon, it is usually watery; if cut too late there is a possibility of harm to the stock. If cut too late it has sometimes been found that the following growth is not so vigorous as otherwise. The number of cuttings which can be obtained with a full water supply will vary with the temperature and other climatic conditions. In this Presidency, a well planted vigorous crop of lucerne should always give seven or eight cuttings and many give up to twelve, under very high manuring or sewage effluent. Heavily manured crops often yield over 80,000 lbs. of green fodder per acre in the first year. The average return lies, however, between 30,000 and 40,000 lbs. of green fodder per acre. The yield in the second year is often considerably lower than the first, however well-manured the crop may be. From the third year the crop deteriorates very rapidly and it may be usually taken that the crop will rarely last longer than four years in a profitable condition.

In the Bombay Presidency, lucerne is practically always grown alone and experiments so far indicate that this is the best plan.

Lucerne as fodder and hay.—As already stated, generally speaking, it is considered that the maximum yield of lucerne and the largest amounts of valuable food will be obtained if it is cut when about half in flower. It will be a more serious error to cut too early than to cut too late. When used as a green fodder which is almost always the case in this Presidency, it is very important that lucerne should not be cut too early because of its effects on some kinds of stock. Young lucerne, if eaten directly from the field and without a considerable supply of dry fodder taken at the same time, is liable to cause tympanitis or hoven in cattle or sheep though not in horses. The danger is however very remote if the lucerne is allowed to wither slightly before being fed to the animals. About ten pounds per day can then be fed to a horse or a cow with very great advantage. Lucerne is now very extensively used by the *gavlis* or milkmen for their milch cattle and the use and the traffic tend continually to increase.

At present, and for a long time to come probably lucerne will be used for other purposes than hay making. The demand for green fodder is so great that a valuable material like lucerne is not likely to be dried into hay during the long dry weather and in the rains it is impossible to make hay, and silage would be much more likely. But even its extensive use for silage is not probable, as it is not quite an easy thing to make into silage and besides, though good silage was made at Ganeshkhind in 1909 yet the loss in weight (71·3 per cent.) was so great that this can hardly be taken as a fair example.

But lucerne is essentially a crop for cutting green, and feeding direct to stock. For this, it has no rival among leguminous crops over the greater part of the Bombay Presidency and together with fodder *jowar* and maize would seem to be likely to go more near to solving the fodder problem in the Presidency than any other method yet suggested.

XVI.—Guinea Grass (*Panicum maximum* or *P. Jumentorum*). A very special place among fodder grass crops must be given in Western India to guinea grass. This has proved itself of extreme value as supplying a good

succulent nutritious fodder throughout the year, and its use is spreading rapidly. The peculiar advantage of this grass is that it grows well under shade and especially so under mango trees, while a small daily supply of good green feed can be obtained without any cost by planting it on the sides of permanent water channels. At present, its cultivation in Bombay is steadily growing. The demand on Poona for root stocks as seed, is continuous and considerable, and though its area is not separately measured or recorded yet it is grown in every part of the Bombay Presidency, including Sind, except in the Konkan. Even in the Konkan it has been recently introduced and grows luxuriantly.

Guinea grass will grow in almost any soil, provided it is not water-logged. It does best perhaps on medium loam which can be irrigated to advantage or on light deep sandy soil. For planting of the crop, June and July are the best months, in this Presidency wherever the monsoon rains occur. If the planting takes place at any other season the field should be flooded with irrigation water immediately after planting. After a plantation has been established guinea grass can hardly get too much water or manure. The richer the land the more succulent and tender will the fodder be. On the other hand, without manure its yield rapidly declines. If the rainfall be normal the crop will not require irrigation in the monsoon over the greater part of the Presidency. But as soon as the rains are over it should be irrigated every ten or twelve days throughout the year. Guinea grass is very apt to become overrun with weeds and hence fairly frequent weeding is necessary. Though the grass is perennial the plantation is not ; and if not dug up and replanted frequently, its yield will rapidly decline and it is usually necessary to re-establish it after three years.

Along the sides of irrigation channels guinea grass serves a very useful and profitable purpose. The grass grows very well indeed and smothers the weeds, besides protecting the sides of the channels from erosion. It also produces a considerable amount of good fodder from an area usually almost entirely wasted. In this case the fodder is obtained without any special expenditure and is available in some quantity throughout the year.

The first cutting of guinea grass can be obtained in three months after planting. It is customary to take cuttings about every six or seven weeks when the plantation is established or about nine or ten in a year but in some parts as many as twelve cuttings have been obtained annually.

Under crude sewage or sewage effluent, guinea grass yields bumper fodder crops, as much as 200,000 pounds of green fodder per acre having been secured at Karachi in one year. The normal yield with eight cuttings however may be taken at between 20,000 to 30,000 lbs. of green fodder per acre equivalent to four to six tons of dry fodder.

STORAGE OF FODDER

There are three ways of utilising fodder, (1) green soiling, (2) making into hay and (3) making into silage.

Of these, green soiling or cutting the crop in the field and feeding green to stock is the usual way of employing the fodder crop grown in the hot weather, while making into silage being quite a new thing in the Presidency, is only just beginning to extend beyond Government farms and experiment stations. The only method which is universally adopted in the Presidency is of making the fodder into hay and storing it for use in the dry weather—when green grass is not available or where crops like hot-weather *jowar*, lucerne, etc., can not be raised in the hot weather.

Speaking generally, the storage of grass and other fodder is limited by the climatic conditions of each tract. Where the rainfall is regular and certain, storage is only necessary for the purpose of providing fodder during the hot season and early monsoon. The first fodder that comes in is the new growth of green grass. Before this is consumed the by-products of cultivated cereals and pulses become available. The excess of these over and above immediate requirements is preserved with more or less care according to the necessities of the climate for the rest of the season. On the other hand, where the seasons are precarious, every endeavour is made to preserve all that can be kept to guard against future scarcity. The practices of storing grass and fodder indeed form a valuable indication of the measure of protection which each tract enjoys against seasons of scarcity and famine.

(1) Grass.—In Gujarat the grass is cut and tied in bundles about one pound each. The ricks are either circular or rectangular but are not thatched. The residue at the approach of the monsoon is conveyed to house-lofts or to tiled sheds.

In the Konkan, the grass is mostly of very inferior quality, but owing to the small nutritive value of the cereals (rice straw especially), is the principal fodder. It is not stacked but piled in loose heaps pending transport to Bombay or use for *rab*. Any, kept for the rains, is stored in cattle sheds or lofts but storage is little resorted to, for the annual supply is certain. In Ratnagiri, where export is not remunerative, a good deal is stored in the forks of trees or on detached boulders of rock or on raised trestles. These are precautions against damage by white ants. But no attempt to keep grass throughout the monsoon is made.

In the Deccan, grass is either stored in small circular or large rectangular stacks. In Sholapur, the sides and tops of stacks are plastered with mud as a protection against fire, cattle and theft, rather than against rain. Generally, the grass is all consumed in the early monsoon before the heavy late rains come. In Nasik, where *Kurans* are more numerous, large dealers stack grass and thatch the stacks with split bamboos interwoven with *Karvi* (a reed). The interstices are stuffed with coarse grass or where obtainable, with the leaves of the *palas* (*Butea frondosa*). In the neighbourhood of the Sahyadris, where the better cereals do not grow, some care for the preservation of grass for use in the early monsoon is shown. It is not stored in lofts, as in the Konkan, but in tree forks or in stocks plastered over with layers of earth.

In the Bombay Karnatak, the practice varies according to the similarity of the conditions to those of tracts already noticed. In Bijapur, grass is not stacked except to the small extent noticed in Sholapur. In Belgaum, ricks are far more common and are sometimes very large. Near the *Ghats* they are thatched with rice straw or with *tur* and cotton stalks or covered with earth.

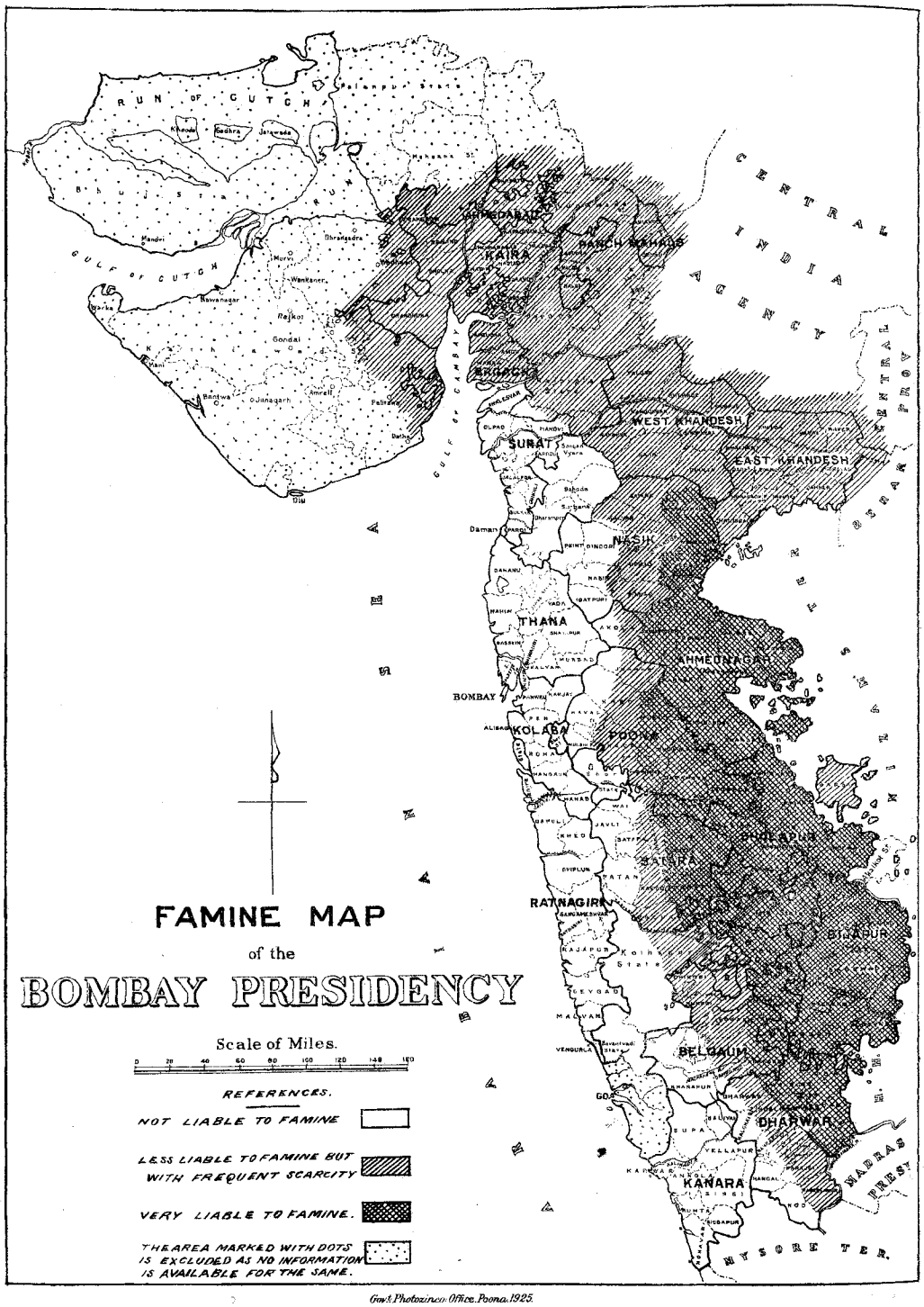
In the tracts of lighter rainfall no covering is seen. In the black soil tracts of Dharwar, grass is not plentiful enough to permit of any preservation in ricks. In the rainy tracts, the Belgaum practice is followed.

(2) Fodder other than grass.—The fodder (stems and leaves) of cultivated cereals and pulses is a bye-product after separation of the grain. *Jowari* and *bajri* fodder are by far the most valuable and plentiful. Wheat and all pulses are trodden out by cattle but only the ears of *jowari* and *bajri* are put on the threshing floor. The trodden fodder (*Bhusa* or chaff) is either fed off at once—a judicious mixture of wheat and pulse chaff being made—or is stored in bins or houses or in yard heaps. *Jowari* and *bajri* fodder are more or less carefully preserved according to necessity. In Gujarat, temporary unthatched stacks are made and what is left at the approach of the monsoon is put in lofts or houses. In the Konkan, the straw of rice and hill grains is temporarily preserved as in the case of grass. The storage of fodder in the Deccan is scrupulously observed. *Bajri* is inferior to *Jowar*. Where both grow, the fodder stack is generally built on a foundation of *bajri* and thatched similarly, or else the *jowari* stack is covered with a thatch of the straw of the spelt variety of wheat, useless as fodder. The mode of preservation is similar to that adopted for grass. In Khandesh, it must be noticed that the early *jowar* is tied into bundles and placed in an upright position and surrounded by thorns. It is never stacked. In this district, too, *bajri* is trodden out like wheat and the *bhusa* is preserved like that of wheat. In the Bombay Karnatak—out of Kanara—the early *jowar* straw is either built into small dome-like ricks and covered with clods of earth or into regular stacks. The former are often, with much deterioration, preserved for two or three seasons, the latter keep the fodder good for years. A peculiar practice exists of preserving the *bhusa* of wheat, etc., inside circular *jowari* or *bajri* ricks. The rick is built of upright bundles in the form of a hollow cylinder which is then filled with the *bhusa*.

In districts where stacks are thatched it is customary to renew the hatch annually if the fodder is kept for more than one year.

PRESIDENCY STATISTICAL TABLE 1922-23.

No.	District.	Number and Area of Villages exclusive of Foreign Territory and Tributary States.						Land Revenue.	Population according to the Census of 1921.		Incidence of Land Revenue per head of Population.	Percentage of Area.					Area on which Irrigated net-cropped Area.	Percentage of food and non-food crops on gross area.															Rainfall at the District Head Quarter Station.			Mean Temperature.			
		Government.		Alienated.		Total.						Cultivated.		Uncultivated.				Food Crops.									Non-food Crops.		Total.										
																		Cereals and Pulses.							Others.	Cotton.	Oil-seeds.	Others.	Food Crops.	Non food Crops.							
		Number.	Area.	Number.	Area.	Number.	Area.		Total.	Per square mile.		Actually cropped.	Fallow.	Available for cultivation.	Not available for cultivation.	Forest.		Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Gram.								Average Fall.	Fall in 1922.	Rainy days in 1922.	January.	April.	July.	October.
	PRESIDENCY PROPER.		Acres.		Acres.		Acres.	Rs.	No.	No.	Rs. a. p.																				Inches	Inches	No	°F	°F	°F	°F
	I.—Gujarat.																																				
1	Ahmedabad ..	843	3,605	50	211	893	3,816	17,71,404	890,825	233	3 8 8	54·3	21·3	4·4	19·6	0·4	4·4	24	12	2	14	..	..	1	10	29	3	5	63	37	29·00	32·51	39	73	88	87	85
2	Kaira ..	524	1,554	28	42	552	1,596	21,83,321	710,982	445	4 7 4	77·9	5·1	2·1	14·9	..	3·3	6	20	8	1	8	..	1	26	8	3	19	70	30	38·78	22·27	33	68	96	91	83
3	Panch Mahals ..	615	1,419	76	189	692	1,608	4,27,428	374,860	233	1 3 11	52·3	9·7	7·2	10·2	20·6	1·5	2	7	11	3	3	24	10	15	6	8	11	75	25	32·85	37·96	47	70	87	84	82
4	Broach ..	397	1,433	18	35	415	1,468	19,78,135	307,745	209	8 2 2	67·3	3·3	2·8	26·6	..	0·1	17	2	2	9	..	..	1	11	47	2	9	42	58	39·69	30·11	43	72	87	84	81
5	Surat ..	814	1,589	35	63	849	1,652	23,84,918	674,351	408	3 8 7	71·6	1·9	5·7	16·6	4·2	1·0	11	1	12	3	1	..	..	12	18	2	40	40	60	39·77	40·63	62	71	86	83	82
	II.—Deccan.																																				
6	West Khandesh ..	1,445	5,328	43	110	1,488	5,438	21,68,140	613,265	113	3 11 0	39·0	6·4	4·8	7·8	42·0	2·2	11	24	4	9	1	1	2	11	30	6	1	63	37	29·06	22·76	37	73	89	85	82
7	East Khandesh ..	1,737	4,221	66	203	1,803	4,551	37,62,976	1,775,837	236	2 12 0	68·4	2·6	2·1	12·6	14·3	1·4	16	16	..	2	..	..	..	14	44	6	2	48	52	22·54	26·58	50	71	92	80	80
8	Nasik ..	1,533	5,427	162	465	1,695	5,877	13,59,922	832,576	141	2 1 10	49·7	16·2	1·8	10·6	21·7	4·3	8	41	3	7	6	..	4	13	5	7	6	82	18	29·98	21·21	55	67	87	78	77
9	Ahmednagar ..	1,236	5,782	139	828	1,375	6,610	19,68,274	731,552	110	2 11 5	60·8	14·9	1·1	10·7	12·5	5·1	40	29	1	4	1	..	2	8	7	2	6	85	15	23·50	22·69	31	69	85	77	75
10	Poona ..	1,005	4,535	198	772	1,203	5,357	16,42,051	1,009,033	188	1 11 1	58·6	16·4	0·4	12·5	12·1	6·9	43	25	4	3	2	..	3	7	1	2	10	87	13	28·86	24·93	47	77	86	78	80
11	Sholapur ..	669	4,241	50	315	719	4,556	12,52,713	742,010	163	2 2 6	73·7	12·9	0·6	8·9	3·9	4·5	69	8	..	1	..	1	2	4	2	3	10	85	15	27·55	18·32	25	73	90	79	78
12	Satara ..	969	3,858	389	1,052	1,358	4,910	22,24,402	1,026,259	209	2 1 8	63·8	10·4	0·9	10·6	14·3	5·2	28	19	2	2	2	1	3	13	1	5	24	70	30	39·75	45·75	70	67	88	76	77
	III.—Karnatak.																																				
13	Belgaum ..	914	3,635	218	976	1,093	4,611	18,67,535	952,996	206	1 6 4	61·1	13·5	2·0	8·3	15·1	3·7	36	6	6	7	2	1	2	15	11	2	12	75	25	50·55	43·39	76	70	81	71	73
14	Bijapur ..	1,013	5,058	161	650	1,174	5,708	16,02,884	796,876	140	2 1 1	76·0	12·5	1·3	5·4	4·8	1·0	60	5	..	10	..	..	2	4	12	2	5	81	19	23·28	22·22	29	74	88	78	76
15	Dharwar ..	1,280	4,203	184	399	1,464	4,602	30,57,760	1,036,924	225	2 3 9	71·1	10·8	1·8	8·1	8·2	3·1	27	..	6	13	2	..	2	13	27	2	8	63	37	32·88	30·64	71	72	82	78	74
	IV.—Konkan.																																				
16	Thana ..	1,532	3,293	62	130	1,594	3,434	18,33,616	759,916	221	1 11 6	26·8	18·4	1·9	16·5	36·4	1·0	..	..	52	..	8	..	..	8	..	1	31	68	32	97·59	93·9	102	72	86	80	80
17	Bombay Suburban ..	44	134	48	19	92	153	1,57,175	152,840	1,076	..	37·6	27·9	6·1	24·4	4·0	0·6	..	..	43	..	..	..	..	6	..	2	49	49	51	Not available.						
18	Kolaba ..	1,541	2,059	86	98	1,627	2,167	13,71,753	562,942	207	2 12 4	27·6	30·3	1·4	16·8	23·9	0·3	..	..	68	..	10	..	..	12	..	1	9	90	10	85·29	76·63	91	74	83	81	82
19	Ratnagiri ..	1,268	3,743	68	246	1,336	3,989	8,92,881	1,154,244	288	0 13 5	31·7	39·0	0·3	28·4	0·6	3·9	..	..	40	..	17	..	..	24	..	7	12	81	19	96·69	101·93	101	76	82	80	80
20	Kanara ..	1,419	3,946	..	..	1,419	3,946	10,66,975	401,727	102	2 7 10	9·6	4·1	1·6	2·7	82·0	9·4	..	..	64	..	1	..	..	6	..	5	24	71	29	118·31	110·96	118	77	82	79	79
	SIND.																																				
21	Karachi ..	784	11,231	10	27	794	11,258	11,15,274	542,065	48	1 11 7	4·6	6·2	16·7	70·3	2·2	89·1	7	3	63	4	..	..	..	12	..	8	3	89	11	7·62	2·02	4	64	80	89	83
22	Hyderabad ..	860	3,981	68	437	928	4,418	17,80,345	573,450	130	2 15 6	21·1	26·5	33·8	16·1	2·5	100·0	2	25	41	6	..	..	..	3	10	8	5	77	23	7·25	2·63	5	65	88	90	86
23	Thar and Parkar ..	961	13,620	2	16	963	13,636	16,08,776	396,331	29	3 10 2	10·1	17·0	20·9	51·4	0·6	45·4	3	58	8	8	..	..	..	2	14	2	5	79	21	4·76	6·04	4	62	85	89	79
24	Nawabshah ..	753	3,824	12	66	765	3,889	15,44,543	418,660	108	2 13 2	19·1	31·2	17·0	29·1	3·6	92·7	22	25	8	10	..	..	4	4	17	5	5	73	27	6·42	2·76	4	65	86	98	92
25	Larkana ..	733	4,668	21	389	754	5,057	27,66,500	597,960	118	4 9 7	20·4	25·6	28·1	24·0	1·9	85·0	9	..	45	12	..	..	3	20	..	10	1	89	11	4·44	1·34	3	55	82	95	84
26	Sukkur ..	686	5,165	29	447	715	5,612	14,68,514	510,292	91	4 11 0	12·0	18·4	12·8	49·7	7·1	72·2	30	5	14	25	..	..	10	11	..	4	1	95	5	2·66	0·81	2	78	83	109	97
27	Upper Sind Frontier ..	428	2,622	5	42	433	2,664	17,34,178	240,619	89	3 1 7	30·9	25·4	15·5	25·9	2·3	100·0	14	15	17	17	..	..	18	8	..	11	..	89	11	4·00	0·13	1	55	81	97	84


RUN OF CUTCH
Bhuj
Mandvi
Gadhra
Jakwada
Nawanagar
Rajkot
Gondal
Wankaner
Morvi
Dhrangadra
Mandvi
Bantwa
Junagarh
Amreli
Palitana
Dhrol
Jodia
Kalyanpur State
Navanagar
Gulf of Cutch
Gulf of Cambay
AHMEDABAD
KAIRA
PANCH MAHALS
BROACH
SURAT
Dharampur
Daman
Dharmpur
Bansda
Sanjan
Vyara
Bulsar
Gandevi
Navsari
Gandevi
Gandevi
Gandevi

APPENDICES.

APPENDIX A—Chronological Record of Famines.

This list will be confined to famines which have befallen the Presidency since the commencement of the nineteenth century. It may be added, however, that tradition or history records serious famines as far back as 1396 when the Durga Devi Famine began which lasted 12 years and extended over the whole of India, south of the Narbada.

1802-3—*The whole Deccan and Karnatak, with Thana and Ratnagiri of the Konkan.*

Holkar's famine—This famine was caused by the march of the army of Yashvantrav Holkar to Poona, plundering villages and destroying standing crops—a work which was completed by the Pindharis. Districts not directly affected, were famine-stricken by the great influx of outsiders in search of food. The Peshwa's Government encouraged the import of grain and distributed it free of charge.

1806—*Kanara.*

Local scarcity was first caused by an influx of strangers from Ratnagiri and the Deccan. It was increased by depredations of robbers and the prohibition of grain exports from Dharwar and developed into a severe famine. Three thousand persons are said to have starved. The land assessments were remitted and advances were made to cultivators.

1812-13—*Ahmedabad, Kaira and Broach.*

Locusts appear to have caused this famine, which was most severe in Kathiawar. In the previous year the tracts of Marwad suffered from locusts and insufficient rain and many thousands flocked into Gujarat. Able to help them for a time, Gujarat was itself reduced to equal misery. Private charity was large but unmethodical and useless. A pestilence followed the famine which carried off 100,000 persons in Ahmedabad alone.

1818—*Sholapur.*

Famine due to ravages of Bajirav Peshwa's army, added to failure of crops. It was accompanied by a severe epidemic of cholera.

1819-20—*Broach, Poona, Sholapur and Bijapur.*

Cholera and failure of rain in Poona and Sholapur and failure of rain in Bijapur, and excessive rain in Broach caused very severe distress.

1824-25—*Deccan, Karnatak, Gujarat and Konkan.*

Failure of rain caused famine. Large emigrations and great loss of cattle. The revenue was remitted in most districts and relief works were opened by Government.

1832-33—*Deccan and Karnatak.*

Failure of rain. Though grain duties were remitted, prices rose to 10 or 12 lbs. per rupee. Private charity was large and Government opened relief works.

1834—*Ahmedabad, Kaira and Khandesh.*

Rainfall short. Locusts swarmed and damaged crops. Great scarcity. Large remissions granted. In Khandesh the scarcity due to failure of rain only.

1838-39—*Broach, Surat, Khandesh and Thana.*

Large remissions required by failure of rain. Many villages were for a time deserted, the people having gone with their cattle to the hills.

1844—*Khandesh and Poona.*

Rain failed. Much distress.

1845—*Deccan and Panch Mahals.*

Rain failed. Some lives lost.

1846—*Deccan.*

Continuation of scarcity in the Deccan.

1848—*Kolaba and Thana.*

Salt rice crop greatly damaged by high spring tides. Remissions amounted to Rs. 37,000.

1852—*Kolaba.*

Continuous heavy rain from 7th-12th December damaged crops stacked in the fields.

1853—*Sholapur, Bijapur, Kolaba, Thana and Panch Mahals.*

Failure of rain. All the chief crops failed.

1854—*Kolaba and Thana.*

Excellent harvest, but harvested crop ruined by a terrific hurricane with rain. Many valuable fruit trees broken down. Large remissions necessary.

Nasik, Sholapur and Bijapur.

Scanty rainfall. Large emigrations. Relief works opened.

1855—*Thana and Kolaba.*

Scanty rain after favourable commencement of monsoon. About ¼th of the area prepared for rice left unplanted and great loss by withering of seedlings in seed-beds.

1856—*Panch Mahals.*

Complete failure of late rains.

1862—*Deccan.*

Failure of rain. Relief works opened. Compensation for dearness of grain given to Government servants on low salaries.

1865-66—*Kanara and Dharwar.*

Grain prices very high, owing to large area under cotton. Short rainfall. The large bamboo seeded and gave relief in Kanara.

1875—*Ahmedabad.*

Floods of the Sabarmati (*see* Floods).

1876-77—*Deccan and Karnatak.*

The great famine caused by failure of rain. Nine districts covering 50,000 square miles, and inhabited by 8 millions of people were affected. Early and late harvest failed almost completely. Distress began to be felt in October 1876. Large supplies of grain thrown into the affected tracts, lowered prices but distress continued till the end of July 1877. Relief works and organized charity prevented enormous loss of life. As it was, the loss of life and of cattle was great.

In the Konkan the rainfall was deficient or untimely and the outturn was very low.

1877—*Panch Mahals.*

Rain below half average. Large failure of crops. Special relief measures necessary.

Deccan and Karnatak.

The Deccan and Karnatak famine continued. Relief works were opened in September 1876. Heavy rain fell in April in the south and gave some promise of a favourable monsoon. Many left relief works for their fields. But the early monsoon failed. Gujarat suffered. The September rain averted a further famine in the Deccan and Karnatak and in Gujarat. Food supplies were sufficient but the long distances and cost of transport made prices very high. At first numerous small works were opened under Revenue officers, but experience soon taught the benefit of large works under professional agency. For the first time relief was reduced to a system. Gratuitous relief in the homes of the distressed was confined to those unable to attend the works or the relief houses. The total cost of famine reached 1½ crores of rupees. Deducting a fair value for the work done and the sale proceeds of Government hay and grain and the extra profits on guaranteed railways, the net cost was half a crore.

In November 1876 the numbers on relief works were 98,422. They rose to 339,129 in January 1877, and after a slight fall in April again rose in June to 528,951. Relief works were closed in November 1877 as by this time field operations had become possible and the people largely deserted the works.

1891-92—*Karnatak.*

Owing to partial failure of the south-west monsoon, famine was declared in the Bijapur district and in portions of Dharwar and Belgaum districts with an area of 8,169 square miles and a population of 1,240,000. Relief works were opened. Specially large advances of *tagavi* amounting to 7½ lakhs were made. Relief works were also opened in Sholapur, Satara and Poona in parts of which scarcity in a milder form existed for a short time only. Distress reached its height in April and May, and on the last day of April 5,817 persons were employed on relief works. Remissions or suspensions were granted. Scarcity also in a milder degree existed in the Thar and Parkar district of Sind.

1896-97—*Deccan and Karnatak.*

This great famine was caused by irregular rainfall. The tracts dependant for the most part on *kharif* crops received abundant rain till the middle of August. In several places the rainfall was so heavy as to necessitate resowing. But beyond a few scattered showers there was practically no rain in September and October to bring the *kharif* crops to maturity and to sow the *rabi* crops. Nine districts of the Deccan and Karnatak—the whole of 6 districts and parts of 3 districts—were affected by famine. The outturn of *kharif* crops in the affected districts was not even as much as one-quarter of the average and there were practically no *rabi* crops except in a few favoured places. The sudden and general rise in the prices of food-grains pressed heavily on persons who had no savings. The distress was aggravated in Poona and Satara districts by the fact that many of the labourers who usually go to Bombay for work during the fair season had not this resource during the prevalence of plague, and it subsequently became necessary to open relief works in tracts hitherto considered immune from famine. The collection and breaking of road metal were considered suitable works in the early stage but subsequently irrigation works and construction of embankment works for 2 railways were undertaken. The numbers relieved rose continuously from November 1896 to April 1897, the daily average number relieved during the latter month being 438,939. The number declined in May and June but again rose in July, the daily average during the month being 394,912. Rs. 30½ lakhs were advanced as *takavi* in the affected districts and these were mostly spent on improvements which will alleviate distress in future. By the end of December 1897 nearly all relief works were closed.

1899-00—*The whole Presidency.*

The famine in the year 1899-1900 was of unprecedented severity throughout the Presidency and was caused by the scantiness of both early and late rains. In the *kharif* tracts the rainfall in June was sufficient for the sowing of early crops but in July and August it was so light that the young crop withered and there was not in these tracts enough rain in September to save them. In the *rabi* districts sufficient rain fell in September to give promise of a late crop harvest but there was no useful rain later and crops which

with a few additional showers or even heavy dews would have been excellent withered before coming into ear. The area affected by famine comprised the whole of the districts of Ahmedabad, Kaira, the Panch Mahals, Broach, Khandesh, Ahmednagar and Sholapur, the greater part of Surat, Nasik, Poona and Satara, about half of Bijapur and a few talukas in Thana and Belgaum. The affected population roughly numbered 9,776 thousands out of a total population of 12,263 thousands. The distress began to be felt early in August and test works were started wherever necessary under the supervision of Local Boards. By the end of October regular relief works became necessary and were opened in several districts. By the end of that month the daily average number relieved on works and gratuitously was 129,512. One month later it rose to 264,478 and by the end of the year it amounted to as much as 584,660. The number continued to increase rapidly up to 1,308,843 at the end of March. In the next month there was only an increase of half a lakh. In May there was a decline mainly owing to exodus from works on account of severe outbreak of cholera. Owing to the retardation of the monsoon especially in Northern Gujarat the numbers on relief works again rose in June and July, the maximum of 1,611,420 being reached in the latter month.

The relief workers were mainly engaged on irrigation tanks, drainage channels, railway embankments, road construction and metal breaking. At a later stage small works under Civil Agency were opened in order to provide work for the cultivators near their homes. Works under the Forest Department were undertaken for the employment of distressed hill tribes. Relief was also provided by 5 Municipalities for distressed weavers by employing them in their own craft.

The expenditure on direct famine relief up to the end of March 1900 amounted to over 115 lakhs of rupees. Besides this Government advanced more than 40 lakhs to landholders as *takavi* for agricultural improvements. After March 1900, a further advance of 99 lakhs was made for purchase of seed and cattle. The scaricty of fodder occasioned a great loss of valuable cattle especially in Northern Gujarat.

1900-01—*Gujarat, Deccan and Karnatak.*

The season of 1900, although not so disastrous as the preceding one, was far from satisfactory. Owing to the late break of the monsoon and the failure of the late rains the yield of the *kharif* crops was poor and the *rabi* crops were more or less completely lost. The importation of cheap grain from other parts of India in which the season had proved more favourable kept prices much lower than they were in the previous year. But it was found necessary to continue relief measures on a reduced scale throughout Gujarat and the Deccan and in parts of the Karnatak. The affected population was 7,142 thousands out of a total population of 11,499 thousands. The numbers in Gujarat would have been higher but for the fact that the poorer classes were able to sustain themselves for many weeks on a variety of grass seeds.

Relief operations were at their height in the beginning of the year and a decline in the number of workers and of those gratuitously relieved did not set in until August 1900, the daily average in the last week of that month being 1,282,192 against 1,611,420 in the corresponding week of July. The decrease continued until the numbers had fallen to 176,773 in February 1901. In March a fresh influx commenced and there was a steady increase until June when a total of 477,408 was reached. Rain fell in July, after which the numbers continued to fall. The maximum number of recipients of relief in 1901 was less than one-third of the highest total reached in 1900. This was due not only to better harvests and lower prices, but also to extensive emigration from the Deccan districts and to the subsistence of large numbers of people in Gujarat on the wild produce of meadow lands and of fields which had remained untilled.

In Gujarat the main feature of the year was the general employment of the able-bodied on village works, a few central works being reserved for those who were inclined to abuse local relief. In the Deccan and Karnatak the bulk of the workers were employed at central camps. Small works were also opened where necessary. Special relief for distressed weavers by employment in their own craft was continued in Sholapur, Savda, Ahmednagar, Bhingar and Sangamner, and began in Poona, Bijapur and Gokak. The charges were met from municipal funds, supplemented where necessary by loans from Government or grants from charitable funds. In rural areas in the Bijapur district work for weavers was provided entirely at Government expense.

The showers which fell throughout the Deccan in April 1901 averted what might have proved in some districts a serious water famine in the hot weather, but the general water-level was low almost everywhere and measures for the improvement of the water-supply were continued.

There was no scarcity of fodder and no special measures were therefore required for the preservation of agricultural cattle.

During the year the expenditure on direct famine relief was over Rs. 2,83,00,000, and the indirect charges amounted to more than Rs. 21,00,000, while disbursements from charitable relief funds from the commencement of the famine to the end of June 1901 reached a total of Rs. 42,00,000. Loans for well-sinking and other agricultural purposes were granted to the extent of Rs. 86,00,000 during the year and a further sum of Rs. 25,00,000 was advanced up to the end of August 1901 for seed and cattle, for subsistence and for land improvements. The revenue remitted during the two years 1899-1901 in Gujarat, the Deccan and the Karnatak, amounted to 35·1 lakhs of rupees out of a total demand of 517·3 lakhs and the collection of nearly 39 lakhs was suspended. Further remissions and suspensions were also made afterwards.

1901-02—*Gujarat, the Deccan and Karnatak.*

With a light and intermittent monsoon the season of 1901 presented a close resemblance to that of 1900. Breaking late in July, the early rains were only barely sufficient for the *kharif* crops in the Deccan and Gujarat, while the winter rains failed almost entirely in Gujarat and were deficient elsewhere. The situation was aggravated by an unprecedented plague of rats and locusts which caused considerable damage in Gujarat and parts of the Deccan and Karnatak.

The importation of cheap grain from other parts of India kept prices low. In Gujarat however, the advantage was partly counterbalanced by the contraction in the supply of edible grass seeds on which large numbers had subsisted for several months in 1900-1901. Relief measures were continued in Northern Gujarat, in parts of Southern Gujarat, of the Deccan and Karnatak and in the desert portion of Thar and Parkar. The population affected numbered 4,189 thousands, out of a total population of 8,776 thousands in the affected parts.

The decline in the numbers on relief works, which had commenced in July 1901, was maintained up to the end of November, when the numbers stood at 42,000 as compared with 376,000 at the end of August. From December the numbers rose steadily (excepting a temporary decline in March) till the end of May, when they stood at 260,000. The rainfall of June effected a reduction of 23,000, but in July, owing to the uncertainty of the prospects of the season, there was again a rise, and the numbers, which at the end of that month stood at 239,000, rapidly went up till the third week of August, when the maximum (400,000) was reached. After that there was a steady decrease owing to the favourable turn in the season. The maximum in 1902 was not much lower than the highest number reached in 1901 (477,000), but the total numbers relieved during the year were considerably less than in the preceding year. This was due mainly to better harvests in Southern Gujarat and the greater part of the Deccan, and to lower prices.

Special relief to weavers in their own craft was given on a small scale from State funds, supplemented by grants from charitable funds, in some talukas of Bijapur and from municipal funds in the towns of Gokak and Athni in the Belgaum district.

The expenditure on direct famine relief from 1st April 1901 to 31st March 1902 amounted to nearly 79 lakhs of rupees, the indirect charges to about 6½ lakhs, while between July 1901 and March 1902 a sum of 15½ lakhs of rupees was disbursed from charitable relief funds. In April 1902 the district officers had in their hands nearly 4 lakhs of charitable funds, all of which were afterwards utilised. *Takavi* loans for well-sinking and for other agricultural purposes were granted in the affected tracts to the extent of about 50 lakhs of rupees during the financial year 1901-1902 and a further sum of nearly 17 lakhs was advanced up to the end of July 1902. Out of the total land revenue demand (364 lakhs of rupees) of the Gujarat, Deccan and Karnatak districts for the revenue year 1901-1902, including arrears on account of former years, 219 lakhs were collected or in process of collection at the end of the year and 145 lakhs remitted. The remissions in the Thar and Parkar district amounted to Rs. 1,16,000.

1902-03.

The season set in ominously and the lateness of the monsoon in all the most seriously affected districts gave rise to the greatest anxiety, which was, however, dispelled by an abundant rainfall towards the end of August. The numbers in receipt of relief which had reached 400,000 immediately declined, and it was found possible to close all relief works before the beginning of the year 1903.

1905-06—*Deccan and Karnatak.*

The character of the season of 1905-06 was far from satisfactory. The south-west monsoon opened early in June on the West Coast, but the current did not strengthen till about the third week in June, when it crossed the Sahyadris, and penetrated inland and gave light showers, which induced *kharif* sowings, in the Gujarat and North Deccan. The rainfall in July was in defect of the average throughout, except in parts of the Deccan and in Gujarat, where it was double or treble the usual fall especially in the three northern districts. This unusually heavy rain in Gujarat damaged and washed away seedlings, necessitating resowing in places. In particular, many of the catchment *bandhs* in the rice tracts were breached and consequently very little water was impounded. The fall in August was generally in defect of the average, particularly in Gujarat, and caused anxiety. The withering crops were helped by moderate rain in September in Gujarat and Khandesh, but elsewhere they continued to suffer till relieved by fair rain in October. The rain in November and subsequent months was hardly sufficient to push on *rabi* sowings or to develop the crops already sown. Thus, the outturn of both the *kharif* and *rabi* crops was much below the average everywhere, and particularly so in the Deccan and Karnatak, except in the west and in irrigated areas. As a result, famine was declared throughout the Deccan and Karnatak (except Khandesh) and relief works were opened. The number on relief of all kinds reached a total of 108,000 at the end of May, being largest in Ahmednagar and Bijapur.

1911-12—*North Gujarat, and East Deccan and Karnatak.*

The monsoon opened in the second week of June and spread with great rapidity over the whole Presidency, but the current soon weakened and rain practically ceased in the third week stopping the progress of general *kharif* sowing. Rain again started in July but lasted only for a short time and was followed by a long break of nearly a month, over the greater part of the Presidency. This adversely affected the young seedlings of early sown crops which almost withered in North Gujarat. Conditions, however, improved by the middle of August and moderate rain which followed enabled the completion of *kharif* sowings and helped to revive the crops not hopelessly damaged. There was practically no rain afterwards in North Gujarat. Elsewhere also the September and October rains were considerably short of the average in most places, the *kharif* crops in consequence further deteriorated, and the sowing of *rabi* crops was greatly delayed and had to be confined to favourable situations only. There was some good rain at the end of November and the beginning of December. It benefitted late sown *kharif* crops still in the ground and *rabi* crops already sown but was generally too late to resume retarded *rabi* sowings. There was practically no rain afterwards. As a result of such an extremely unpropitious season the *kharif* crops in the three northern districts of Gujarat yielded almost nothing; those in the Konkan and in the south of Gujarat and the west of the Deccan and Karnatak, gave only a fair yield; while elsewhere the yield was generally poor. *Rabi* crops too except in the irrigated and more favourable situations, withered or yielded poorly. Fodder was scanty almost everywhere particularly in Gujarat and grass had to be imported from outside.

1915-16—*Whole of Gujarat, particularly Northern portion*

Curious enough, the season of 1915-16 was, on the whole, very satisfactory throughout the Presidency except in Gujarat, where it was only fair in the south and poor to bad in the north. The rainfall from June to August was very scanty in Gujarat, and *kharif* sowings, which were confined to favourable situations, did badly in the north. Rains in September and October were somewhat favourable. They saved a severe fodder famine and gave an impetus to *rabi* sowings but the absence of subsequent rains and occurrence of severe frost and cold in places, almost completely marred prospects. As a result of the conditions described above, both the *kharif* and *rabi* crops yielded an insignificant outturn in the province.

1918-19—*Whole Presidency except parts in the close vicinity of the Sahyadris.*

The season of 1918-19 was, from the point of view of agricultural production, one of the most disastrous on record. Drought was general and occurred in each season. The rainfall was, in comparatively few places, more than half the normal, except in some of the heavy rainfall tracts of the South Konkan and the Western Ghats, and even here was very insufficient. The areas, like much of the *mallad* tract, usually considered safe, suffered badly, and the year 1918-19 will be looked upon, for a long time to come, as an extreme example of the droughts which so frequently affect this Presidency. The main feature of the year was the very early opening of the monsoon followed by abrupt breaks in the rains, and their final close much before the proper time. This, coupled with the occurrence of the influenza epidemic at what was, at once, the harvest time of the early crops and the sowing time of the late crops, led to a general reduction in area, failure of growth and scanty outturn almost in every case resulting in the declaration of famine or scarcity over the greater part of the Presidency.

1920-21—*North Gujarat, and East Deccan and Karnatak.*

The monsoon current throughout the season of 1920-21 was weak and prejudicially affected the crops. The *kharif* rains were only a little over half the average throughout the Presidency except in the West Deccan and in Belgaum where they were about the normal. The *rabi* rains were altogether a failure in Gujarat and were very poor at all stations except in Kanara and West Karnatak where they were nearer the average, while in Satara and Sholapur they were about one-third of the normal. As a result of such seasonal conditions, scarcity of food and fodder and deficiency of water supply prevailed throughout the East Deccan and Karnatak and in North Gujarat.

APPENDIX B—Locust Plagues.

The Presidency has frequently been afflicted by locusts. There are two principal species—the Rajputana locust, *Schistocirca tartarica Linn* and the Bombay locust proper, *Orthacanthacris succinta Linn.* The ravages of the former are confined to Sind and Northern Gujarat, their breeding place probably being the sand hills of Rajputana. This locust is one of the true migratory locusts with gregarious habits. Various methods of destruction, such as oil-cloth screens and trenches, have been tried with more or less success.

Orthacanthacris succinta Linn is probably indigenous to a great part of the Western Ghats and the Satpudas from which, when favourable circumstances arise for their development, the flying locusts sally forth to the adjoining tableland of the Deccan. They may breed in this place if favourable conditions of rain occur. In this case the young may do damage, but usually the principal damage comes from the huge swarms of red flying adults during the cold and hot seasons, when they fly about or are blown about by the prevailing winds and devour *rabi* and garden crops. Mangoes and the fruit trees especially suffer.

The first general plague of which detailed record is available occurred in 1882-83. The locust was then wrongly identified as *Acridium peregrinum*. Government made a strong effort to stop their depredations and employed the officers of several departments in organizing a campaign against them. Various methods of destruction were tried and the following general conclusions arrived at :—

1*st*—that it is of the utmost importance to destroy the breeding locusts when they come up in May and June as they did in 1882 and 1883 in vast flights from the coast districts, where they remain comparatively quiescent in the thick jungles on or near the Ghats during the hot weather, and pour in multitudes over the Deccan and scatter themselves over a vast tract of country ;

2*nd*—that a search at random for the eggs when once deposited is of little practical avail ;

3*rd*—that when breeding locusts have been found in large numbers in any district, steps should at once be taken to organize the villagers to commence the campaign against the young insects immediately they are hatched and emerge above the ground ;

4*th*—that as soon as the young locusts appear the most vigorous measures should be adopted to destroy them, the villagers being employed *en masse* for the purpose ;

5*th*—that the Cyprus screen and trap system is not adapted to the circumstances of this Presidency and has been proved by experience to be useless both in the Deccan and the Konkan ;

6*th*—that it is undesirable to rely solely upon any one particular expedient or device for the destruction of the young locusts ; a plan which is eminently successful in one district may prove of little service in another district. Various methods should be tried and experience will show which are best suited to the circumstances of each district ;

7*th*—that a perceptible diminution in the number of the locusts and consequently in the extent of the injury to the crops caused by them may be effected by the measures taken for their destruction ;

8*th*—that the villagers will as a rule with comparatively slight official pressure render willing and valuable assistance in the work of killing the insects ; and

9*th*—that when payments are made to the villagers employed in destroying the locusts as was the case in the Kolaba and Ratnagiri districts in 1883, the system of payment by results is more economical and attended with far better results than the plan of remuneration by daily wages.

More recently the ravages of locusts commenced during the *kharif* season of 1901-02. They again appeared in several districts during the year 1902-03. In July 1903 they appeared in small swarms in Nasik and Khandesh, but did little harm. They re-appeared in September and October in Thana and Khandesh and in parts of Nasik, Kolaba and the three northern districts of Gujarat and did some damage to standing crops. In November they left Thana and Khandesh for a time, but remained in Nasik and Kolaba and extended to the western parts of Poona, Satara and Ratnagiri. They lingered in these districts till March damaging crops and fruit trees. Organized efforts for their destruction were begun in March 1904. Three Assistant Collectors were placed on special duty under the Director, Land Records and Agriculture, and were guided by Mr. Knight, Special Assistant, Agricultural Department. Mr. Lefroy, Entomologist to the Government of India, identified these locusts as '*Acridium succinctum.*' Investigations into their life history were conducted by Mr. Knight and Mr. Lefroy and much valuable information was recorded for the first time. In the beginning of April 1904, locusts were reported from Sholapur and the inland talukas of Poona and Belgaum and later the swarms increased considerably and extended over all the districts, except those in Gujarat. In the middle of the same month Government directed energetic action to be taken in all districts, where locusts were present, to destroy them before eggs were laid. Various meetings of officials and villagers were held by the Assistant Collectors at their camps and the life history of locusts and methods of their destruction were explained. In the middle of April the Thana district was practically free from locusts and the first invasion of the Nagar district had just begun. Nasik was infested in all talukas except the northern. Locusts had entered Surat and rapidly passed on into Khandesh where they entered about the third week of April through Nandurbar. Numerous swarms continued to migrate into Nasik from the Dharampor State. By April 30th, Khandesh was generally infested. After the rains broke, the locusts laid eggs in enormous numbers in the Konkan along the whole line of the Sahyadris and in Khandesh. Hoppers appeared towards the end of July. They were fortunately chiefly confined to the forest regions where cultivation was scanty. They lived in the grass lands and only attacked the coarse millets and rice of forest tribes. These aborigines readily took part in measures for their destruction, and from the rewards granted by Government for this work received compensation for the loss of their crops. These rewards amounted to a total of some two lakhs of rupees and were paid in some cases by daily wages, in others by the weight of locusts or eggs destroyed. By the end of October the hoppers began to assume wings and to invade the Konkan and the plains, but the *kharif* harvest was shortly reaped and suffered little damage. Parasites were observed to be attacking the swarms in November, and in December the locusts appeared to have migrated southwards into Savantvadi, Goa and the forests of North Kanara. From some cause their number had largely diminished, and in March and April, when in previous years they had issued forth and migrated northwards and eastwards, the swarms were by comparison very few in number and small in size. They were reported to have visited Khandesh, Ahmednagar, Sholapur, Satara, Bijapur and Belgaum and to have damaged sugarcane and garden crops. Some swarms went further east into the Nizam's Territory and the Central Provinces. It is worthy of note that they did not visit the Ghat line north of Mahableshvar, where the greater part of the eggs were deposited before. Hoppers in the season of 1904-05 were very rare and were confined to parts of Khandesh and Ratnagiri.

In 1905-06, locusts appeared in several districts but in each case caused little damage. In September 1905 hoppers did slight damage in Ratnagiri and Khandesh.

In October locusts appeared in four talukas of West Khandesh, five talukas in Nasik, three talukas each in Poona, Satara, and Ratnagiri doing slight injury to standing crops in the last-named district. In November, Poona, Sholapur, Satara, Belgaum, Bijapur, Ratnagiri and Kolaba were visited by locusts which caused slight damage to standing crops. By the end of December the Deccan and Karnatak were free. In May 1906, small swarms were reported from Dharwar and Belgaum but no loss occurred. In June they were seen in Bijapur, Sholapur and Khandesh but caused no damage, except in Bijapur where it was considerable. In October they made their appearance in parts of Ahmednagar, Poon and Satara, slightly damaging the crops in places. Towards the close of the year, they again appeared in parts of Belgaum, Bijapur, and Dharwar causing damage to garden crops in places in the first two districts. The year 1907-08 was fortunate in an almost entire freedom from the scourge of locusts. They did make their appearance in isolated parts of Dhulia, Sindkheda and Shirpur in the West Khandesh District but caused no noticeable damage. In the succeeding year, only the Nandurbar Taluka in West Khandesh was visited by locusts and no appreciable damage was sustained. It was not until 1912-13 that locusts reappeared in the Presidency. In this year they appeared in parts of North Gujarat but fortunately caused little or no damage. In 1913-14 locusts visited Ahmedabad, Kaira and Kolaba districts but did no appreciable injury. In the year following, the northwest locusts appeared in North Gujarat in the last week of June, remained there for about a week without doing any damage, as there were no crops at the time, and disappeared in the direction of Rajputana and Central India. Some swarms, however, deposited eggs at Pilodi and Dalalpur in Parantij Taluka and Modasa Mahal respectively. The hoppers emerged from the eggs about six weeks later but prompt measures were at once taken by the Agricultural and Revenue Departments to destroy them. Within a period of one week about six and a half

lakhs of hoppers, weighing nearly half a ton, were killed at Dalalpur village alone, before they were able to cause any damage. It was also observed that birds such as *mynas* fed voraciously on the hoppers and materially assisted in destroying them. Locusts also appeared in Kolaba and Nasik but did no great damage. In June and July of 1916 swarms of the north-west locusts spread over parts of Viramgaon and Parantij talukas and Modasa peta of Ahmedabad district and Nadiad taluka of Kaira district. They did not, however, stop and do any damage. Small swarms of a second brood appeared in the month of October but did no injury to crops. It is satisfactory to note that after 1916-17 locusts have not made their appearance in any part of the Presidency uptil now (April 1924).

Destruction of Locusts.

Organized efforts for the destruction of the locusts were begun in March 1904. Government sanctioned payment of rewards for the destruction of the adult locusts at the rate of half an anna per seer, which was raised to four annas when the breeding season came and destruction became a matter of greater importance. At the same time it was considered that the destruction of the locusts' eggs was more likely to have practical effect and a reward for their destruction was offered at the rate of three annas a seer. This was afterwards raised to one rupee per seer. The rate for hoppers varied. At the outset, when the hoppers were very small and the people apathetic, the rewards were generally fixed at one rupee per seer. Afterwards as the hoppers grew in size this rate was gradually reduced.

The destruction of the swarms of adult locusts was not attended by any real success. At Mahabaleshvar various methods of destruction were tried during the night time when the locusts were rendered torpid by cold. But none of these was capable of application over a wide area, or was likely to give appreciable results without an incommensurate cost. Later when the swarms spread out and immediately before and during the copulation season, it was found that the locusts, being unable to fly, were easily killed, although not in very large numbers. After the eggs had been laid considerable success was obtained in some parts in searching for them, chiefly in the hilly parts of northern Kolaba and in the Peint taluka of the Nasik district. This was contrary to previous experience, but the hill tribes, encouraged by the reward, soon learned the business of egg searching. Later still in August, operations for the destruction of the hoppers were undertaken. These were on a large and organized scale and were continued until the end of November. Over two lakhs of rupees were spent in rewards for the destruction of hoppers alone. The sums expended on the destruction of adult locusts and eggs were comparatively small. The following is a summary of operations against the hoppers. It is impossible to say what fraction of the whole number of locusts was thus destroyed, but there can be little doubt that for the most part nature must be chiefly relied on to diminish the plague which she periodically causes to arise :—

	Total.			Total.	
	Weight of the hoppers destroyed.	Amount paid as reward.		Weight of the hoppers destroyed.	Amount paid as reward.
	Mds.	Rs.		Mds.	Rs.
Poona ..	4,343	51,850	Ahmednagar ..	305	5,164
Ratnagiri ..	4,551	1,10,795	Thana ..	1,838	14,924
Nasik ..	237	1,284	Satara ..	1,450	5,636
Kolaba ..	527	10,911	Khandesh ..	1	50
			Total ..	13,252	2,00,574

After 1904-05, in which year organised efforts for the destruction of locusts were first made, though locusts appeared occasionally in the Presidency, the damage from them was never so serious as to necessitate any special measures for their destruction. In 1914-15, however, some swarms of them deposited eggs in parts of Ahmedabad and it was found necessary to check the pest before it was too serious. The efforts made by the Agricultural and Revenue Departments to attain this end have already been referred to above. As noted already, after this year (1914-15) locusts only appeared in the two following years but as they did no damage no measures had to be adopted for killing them and after this they have not visited the Presidency to the great relief of all.

From the observations of Mr. Lefroy, Entomologist to the Government of India, of Mr. Knight, Special Assistant, Agricultural Department, and of others, the following points in the life history of the Bombay locust have been more or less thoroughly established :—

1. The eggs are laid after the first good rain in June or July in clusters in damp earth.
2. The eggs hatch in from three to four weeks.
3. The hoppers, when newly hatched, are light green in colour and in form like their parents. Under a microscope black dots may be seen over their whole bodies.
4. The hoppers moult, *i.e.*, change their skins four or five times.
5. In the fourth change rudimentary wings are observed.
6. In the fifth change the rudimentary wings are quite noticeable.
7. When the last skin is cast off the insect is like its parents in every way but the colour. The colour at this stage is light brown with markings of yellowish white.
8. As the cold weather approaches the colour becomes salmon pink to red and the locusts gather together in large swarms. Dissections made at this stage show only very rudimentary reproductive organs.
9. In the latter part of the hot weather the ovaries of the females develop slowly at first and rapidly as the time for rain draws near. Up to this time the locusts have lived in dense swarms ; they now disperse throughout the country. At the first rain they turn black with bluish markings, copulate and deposit their eggs. A late monsoon appears to have an unfavourable effect on breeding and egg laying.

LOCUST PLAGUES IN THE PRESIDENCY PROPER.

(For Plagues in Sind see Sind Abstract.)

1812—*Broach.*
Locusts caused failure of crops.
Ahmedabad.
Frightful devastations in Dhandhuka.
1834—*Kaira.*
Great scarcity due to ravages of locusts. Many cattle starved. Remissions amounting to 2 lakhs of rupees granted.
Ahmedabad.
Damage caused by scant rainfall increased by locusts. Grain sold at 10 lbs. per rupee.
1835—*Poona.*
Great damage by locusts.
1845—*Panch Mahals.*
Maize crop devoured.
1864—*Belgaum.*
Crops damaged in Sampgaon and Parasgad.
1865—*Belgaum.*
Crops damaged in Sampgaon and Parasgad.
1869—*Ahmedabad.*
Locusts caused great loss of crops.
Khandesh.
Swarms of locusts but no damage.
1870—*Ahmedabad.*
Some damage.
1873—*Khandesh.*
Much injury to late crops.
1875—*Belgaum.*
Much damage in Sampgaon and Parasgad.
1878—*Kolaba.*
Cold-weather crops injured. Rs. 40 remitted.
Thana.
Excellent harvest reduced by locusts. Remissions Rs. 160, outstanding balance Rs. 2,970
Poona.
Kharif crop destroyed in Bhimthadi and Purandhar.
Satara.
Cold-weather crops suffered.
1879—*Ahmednagar.*
Jowari injured.
1880—*Belgaum.*
Sugarcane injured. Other crops had been harvested.
Nasik.
Remissions Rs. 220 ; outstanding balance Rs. 1,070 due to locusts.
1882—*Khandesh.*
Half the area of the district seriously affected but *rabi* crops unharmed. Rs. 3,220 paid in rewards and Rs. 6,720 remitted.
Nasik.
Bajri and cotton most injured. *Rabi* sowings retarded. Rs. 20,420 paid in rewards and Rs. 2,75,720 remitted.
Ahmednagar.
Kharif crops entirely lost in many villages of Kopargaon and Akola. Much loss in other talukas. Rs. 730 paid in rewards. Remissions Rs. 2,17,940.
Poona.
Injury partial and confined to Maval and the western talukas. *Rabi* crops good.
Sholapur.
Rs. 20,470 remitted.
Satara.
Kharif mostly harvested before flights of locusts passed over the district.
Kolaba.
Remissions Rs. 200.
Ratnagiri.
Harik and *nagli* only unreaped and these nearly destroyed. Rs. 170 paid in rewards.
Belgaum.
Much damage to *rala* and *nachni* in *ghat* talukas. Other crops reaped.
1883—*Khandesh.*
Rewards Rs. 510. Remissions Rs. 19,510.
Nasik.
Rewards Rs. 3,260. Remissions Rs. 260.
Ahmednagar.
Rs. 1,790 paid in rewards. Remissions Rs. 28,170.
Poona.
Satara.
Remissions Rs. 1,380.
Kolaba.
Rewards Rs. 21,580. Remissions Rs. 8,500.
The hill and upland crops seriously damaged ; slight injury to *kharif* crops. Though everywhere early in the season gloomy forebodings regarding the ultimate prospects of the harvest were entertained, the actual mischief was exceedingly slight except as noticed above.
Ratnagiri.
The hill and upland crops seriously damaged. Rs. 19,900 spent in rewards and Rs. 660 remitted.

Belgaum.

Very great damage in the hot season to the crop of myrobalams estimated at Rs. 75,000.

1889-90—*Gujarat.*

Large flights appeared in November and December.

1890-91—*Deccan except Satara, Karnatak except Belgaum and Konkan except Thana and Ratnagiri.*

The flights passed rapidly from place to place so that the total damage was spread over too wide an area to be much felt in any one district.

1897-98—*Several talukas of Gujarat districts.*

Did damage to the standing crops of *bajri, til,* cotton, etc., but their stay was too short to effect any considerable damage.

Thana, Kolaba and Ahmednagar.

Did slight damage.

1900-01—*Gujarat except Broach, Deccan except Ahmednagar, Karnatak except Dharwar and Konkan except Kanara.*

Caused damage to crops. Rewards at the rate of half an anna per seer for all locusts destroyed and 3 annas per seer for locust eggs were granted.

1901-02—*Five districts in the Deccan, the whole of Karnatak and three districts in Konkan.*

No damage reported.

1902-03—*Ahmedabad, Kaira, Panch Mahals and Khandesh.*

Reported to have done extensive damage. They are also reported to have visited all other districts of the Presidency except Kanara.

1903-04—*Deccan except Sholapur and Ahmednagar, Gujarat except Broach and Surat and Konkan except Kanara.*

The season was considerably marred by the appearance of locusts.

1904-05—*Konkan along the whole line of the Sahyadri Ghats.*

At the close of the previous year the prospects were very threatening. Locusts had laid eggs in enormous numbers. Hoppers appeared towards the end of July. Rewards granted by Government for their destruction amounted to 2 lakhs of rupees and were paid in some cases by daily wages, in others by the weight of locusts or eggs destroyed.

Khandesh, Ahmednagar, Sholapur, Satara, Bijapur and Belgaum.

Damaged sugarcane and garden crops.

1905-06—*West Khandesh, Nasik, Poona, Sholapur, Satara, Belgaum, Bijapur, Dharwar, Ratnagiri and Kolaba.*

Caused slight damage to standing crops.

1906-07—*Parts of Ahmednagar, Poona, Sholapur, Satara, Belgaum, Bijapur and Dharwar.*

Slightly damaged the crops in parts of Ahmednagar, Poona and Satara, and garden crops in Belgaum and Bijapur.

1907-08—*Isolated parts of West Khandesh.*

No serious damage.

1908-09—*Nandurbar taluka of West Khandesh.*

Only slight injury done to crops.

1912-13—*North Gujarat.*

Caused only slight damage.

1913-14—*Ahmedabad, Kaira and Kolaba.*

No damage.

1914-15—*North Gujarat, Nasik and Kolaba.*

Prompt measures at the right time avoided any loss of crops.

1915-16—*Parts of Ahmedabad and Kaira.*

No serious damage.

1916-17—*North Gujarat.*

The young hoppers had not much to eat at the time they appeared and were also destroyed by birds, etc.

No locust plagues since 1916-17 to April 1924.

APPENDIX C—Rat Plagues.

In 1874 in Athni and Gokak and in 1875 in Sampgaon and Parasgad talukas of Belgaum rats were very destructive to the *jowari* crop, but the injury was insignificant in comparison with the plague of 1878-80 which may be said to have commenced in Belgaum in October 1878 and to have spread over the Deccan and reached its height in December 1879. Rats were not reduced to normal numbers till the end of March 1880.

ORIGIN OF THE PLAGUE.

The plague was confined to black soil tracts, where rats are always plentiful, but are kept from abnormal increase by the swelling of the soil with the first heavy rain of the monsoon which smothers very many. It is conjectured therefore that the absence of heavy rain in the early monsoon of 1878 favoured an abnormal increase.

The plague affected the tracts which had suffered most in the great famine of 1876-77 when large areas of land lay untilled for two years.

This fact supports a further conjecture that the usual underground stores of grain, laid up by the rats from ripening crops, were reduced so greatly that they were driven to seek their food on the surface, where unmolested on the vast fallows they enjoyed a long season most favourable to their increase.

CAUSES OF ITS CESSATION.

These conjectures are perhaps very nearly correct, but the origin of the plague is more patent than its sudden cessation. The heavy late rain of 1879 and the early frosts and cold were probably the chief causes which stayed the plague. It is conjectured that a parasite (a red tick found on the bodies of dead rats) may have aided in the work of destruction.

HISTORY OF THE PLAGUE.

Rats appeared in great numbers almost immediately after the close of the monsoon (1878), attacking wheat, cotton and garden crops. They attracted serious notice first in Sholapur in November, then in Bijapur, and then throughout the Deccan and Karnatak. They ate up the grain before it was ripe for harvest. Only that was saved which was hurriedly gathered unripe. The heads of *jowari* were picked and the unripe bolls of cotton, while the ears of wheat were bitten off wholly. Groundnut and other garden crops were similarly devastated. In 1878 the late or cold-weather crops only suffered. But in 1879 the early crops were attacked in June and July when the numbers of rats and the devastations caused assumed the proportions of a plague. As soon as the grain was sown it was scratched up and eaten, before it had had time to germinate. Many fields were sown as often as three times, but with the same result. The loss to the *rabi* was as great as to the kharif crops. Whatever grew was destroyed as in 1878. After December 1879 the numbers suddenly decreased and in a very short period the rats disappeared as unaccountably as they came. By the end of March 1880 they had decreased to their normal numbers.

MEASURES OF RELIEF.

The plague was fostered by the religious prejudices of the people. It was commonly thought that the spirits of those who had died from starvation in the famine were, as a compensation, allowed to enter the bodies of the rats to be able to eat the unripe grain and seedlings, not yet ready for food for living men. The cultivators did nothing. Vaddars showed wonderful skill and patience in catching rats and earned large rewards. Mahars, Mangs and Musalmans were driven by necessity to imitate them, but by their ignorance of their habits and of the means of discovering the vermin, fell far behind. In July 1879 Government offered a reward of one rupee per 100 rats killed. In all sixteen million rat tails were brought to the Government officers for the reward. Various means for destruction were devised. Phosphorous paste balls proved useless. The Burmese rat-trap and fumigation also failed. Asphyxiators and sulphur squibs succeeded in small areas, but the tedious digging up of the burrows by those who understood the habits of the rats was by far the most efficacious method. These artificial means may have reduced the numbers but cannot be credited with having freed the country from the plague, for the rats disappeared as soon in places where rewards were not offered (*e.g.*, Akalkot State) as in those places (*e.g.*, the neighbouring taluka of Sholapur) where they were liberal.

Dr. Fairbank of the American Mission, Ahmednagar, asserts that the three most destructive species were—

1. The Indian Jerboa Rat (Marathi *Haran undir* or antelope rat). It has a tail of over 8 inches, ending with a tuft of blackish hairs. Its fore-feet are only half an inch while the hind feet are two inches long. It burrows, forming long galleries, which branch and end in wide chambers, carpeted with dried grass. This rat does not usually hoard its food (grain and roots, especially of the *haridli* grass). The female brings forth as many as twenty young at one litter. This remarkable fecundity accounts for the astonishing rate of increase of rats in the plague.

2. The Indian Mole Rat (called *Kok* by the Vaddars). In colour, it resembles the common brown rat. Its tail is short and naked, and ears small and round. Its incisor teeth are largely developed. This rat lives alone and forms extensive burrows, covering a space of as much as twenty yards in diameter. It stores large quantities of grain and is for this reason in ordinary years well-known to the Vaddars who dig out the burrows and eat both the rats and the stored grain.

3. The large-eared field mouse (named *Mettade* by the Vaddars). Its distinguishing characteristic is its long ears. It lives in pairs or in small societies, at the roots of bushes or among heaps of stones. This rat is always a great pest, but is more liable to destruction than the others named from the insecurity of its habitation.

The following statement gives the details as far as they are on record :—

1874—*Belgaum.*

Athni and Gokak talukas.

1875—*Belgaum.*

Sampgaon and Parasgad talukas.

1877—*Poona.*

Rs. 94,130 paid in wages on relief works.

1878—*Ahmadnagar.*

Rs. 122 remitted.

Poona.

Rs. 5,120 paid in wages on relief works. Harvests reduced by ¾ in the black soil tracts of the Desh.

Sholapur.

Rabi crops of district eaten up before ripe for harvest. Remissions Rs. 13,590.

Satara.

Rabi crops of district eaten up but harvest fair. Rs. 1,000 paid in wages on relief works.

Bijapur.

Rabi crops of district eaten up but harvest fair. Rewards, Rs. 1,570. Rs. 1,470 spent in wages on relief works.

Belgaum.

Athni, Gokak and Parasgad, and also Chikodi.

Dharwar.

Black soil tracts. Cold weather crop damaged.

1879—*Ahmadnagar.*

Greatest injury in Shrigonda, Karjat and Parner. Rs. 16,620 paid in rewards ; Rs. 1,18,760 remitted.

Poona.

Large-eared mouse most destructive. Rs. 3,740 spent in rewards and Rs. 2,280 paid in wages on relief works.

Sholapur.

Whole district. Only ⅛th of area of early crops saved. Rs. 12,860 paid in rewards. Remissions Rs. 88,480.

Satara.

Early in district rats troublesome, but the rains drove them away or destroyed them. Rs. 200 spent in rewards.

Bijapur.

Half the crops destroyed, early and late. Ravages continued throughout the year. Rs. 40,370 paid in rewards. This district had greatly suffered from the famine, and relief works and advances were again necessary. Rs. 4,890 paid in wages on relief works.

Belgaum.

Not so numerous as in the Deccan. Rewards Rs. 2,270.

Dharwar.

Very harmful. Rewards Rs. 95,840. Harvest was saved.

1892-93—*Karnatak, Deccan.*

Rats caused considerable anxiety, appearing first in the locality where they first appeared in 1878, that is, in the eastern talukas of Belgaum. The number, however, never became so numerous, and no special assistance from Government was required. Destruction was most successfully effected by digging the rats out of their holes. But in the Parasgad taluka the people devised a figure of 4 trap which was successfully used. But the plague was stayed by opportune rain and by an enormous increase of ticks, which appeared to be the ordinary cattle tick. They did most harm in the Karnatak.

1900-01—*Gujarat, Khandesh.*

Rats caused considerable damage to crops. Rewards at the rate of one rupee per 100 rats killed were granted. In the Panch Mahals of Gujarat a few Vaddars were brought from Bijapur to show the labourers how to dig out the rats, but the latter did not fully avail themselves of their services owing to caste-scruples and religious prejudices. Difficulty in killing the rats was also experienced as they appeared just after the rains and consequently were able to escape in the grass. Large numbers were, however, killed. Many were killed on moonlight nights in the open with sticks or nets placed on the ground. Where water was plentiful rats were turned out by water being poured down the holes. A somewhat curious but very effectual way of turning out the rats was to catch a grass or rat snake and after tying a string round it to let it into the holes and the rats at once came out. Two poisonous remedies were also tried by the Collector, arsenic mixture and squill mixture. The arsenic mixture at first killed a certain number of rats, but they soon learnt to avoid it. The squill mixture was totally useless.

1901-02—*Gujarat, Khandesh, Nasik, Satara.*

Rats did immense damage.

1902-03—*West Khandesh.*

The rat plague in Nandurbar taluka was so violent that rats ate up all the crops and so the land revenue was required to be suspended. There was also a rat plague in Shirpur taluka and did serious damage to crops, especially wheat.

1911-12—*Dharwar.*

Rat plague appeared in talukas of Gadag, Navalgund and Ron. Rewards to the extent of Rs. 1,750 were paid for the destruction of rats at Rs. two per hundred tails.

1920-21—*Ahmedabad, Broach, Panch Mahals, West Khandesh.*

The special crops damaged were the ordinary *kharif* cultivation and cotton.

APPENDIX D—Floods.

1810 and 1822—*Surat.*

Floods of the Tapti.

Details not on record.

1835—*Surat.*

Floods in August.

500 houses washed away and 20 persons perished.

1837—*Surat and Kaira.*

On 29th August the Tapti began to rise. The flood reached its height on 1st September. It was caused by rain in Khandesh and the high lands on the east of Surat and not by local rain. The rivers Tapti, Narbada and Kim joined and a continuous stretch of water covered the intervening country to a width of over 40 miles. The water was 20 feet deep in the city of Surat.

The destruction in the city of Surat only recorded. 372 houses were entirely washed away, 1,012 fell and 2,539 were injured. Damage amounted to nearly 27 lakhs of rupees. 242 head of cattle drowned and 18 persons. Many villages were destroyed and there was much loss of life and property.

Rs. 25,000 were spent in repairing the damages to the river walls.

In Kaira the Shedhi and Vatrak uniting covered the country for miles. The rainfall as in Surat was not local.

In Kaira 86 villages were flooded in the Nadiad, Matar, Mahuda, Borsad, Thasra and Kapadvanj talukas. 409 houses were destroyed in Kaira town. No lives lost.

1849—*Surat.*

Flood of the Tapti 19th-21st September.

Flood waters 21 feet above high water mark.

1850—*Khandesh.*

Flood of the Utavli.

Many houses destroyed but crops not injured.

1868—*Kaira, 9th-13th August.*

Between these dates the rainfall reached 22·4 inches. The Vatrak and Shedhi were flooded.

395 houses of Kaira were destroyed. In the district 1,960 houses and 3 lives.

Damage estimated at 14 lakhs of rupees.

Relief works costing Rs. 30,000 kept open till end of May. Government and the Municipality shared the cost. Private subscriptions amounted to Rs. 5,000. People refused charity. The money was spent on improving tanks and wells. Land revenue amounting to Rs. 7,520 was remitted.

Ahmedabad, 10th-14th August.

The rain amounted to 27 inches. There had been none before August 10th. The Sabarmati was much swollen but did not flood the country.

Nearly 10,000 houses were destroyed and property valued at 10 lakhs of rupees in Ahmedabad. In the district, especially in Dholka and Sanand rice villages, the destruction of crops by surface floods and bursting of tanks was immense. Damage estimated at 158 lakhs of rupees. 42,000 houses and 6,400 cattle were destroyed.

Government and the Municipality subscribed Rs. 30,000 to relieve the destitute and to give advances for repair of houses.

1871—*Kaira, 2nd August.*

Rain in 24 hours averaged 7·72 inches, but reached 11·41 inches in Thasra.

5 persons, 800 cattle and 5,000 houses destroyed. Loss of property estimated at 2½ lakhs of rupees.

Distress in villages considerable, but was relieved by private charity. Government gave Rs. 5,000 in advances.

1872—*Nasik, 14th September.*

Flood of the Girna, Mosam, Godavari and Kadva.

Chief distress in the valley of the Girna. 1,200 houses destroyed. Loss of property estimated ¾th lakhs of rupees, besides the buildings. Much damage to crops on banks of Girna and Mosam. In 128 villages crops of 7,000 acres washed away, and the soil of 1,400 acres was rendered unfit for tillage.

Subscriptions locally and in Bombay amounted to Rs. 11,000. Grants of timber were made from Government forest.

Khandesh, 15th September.

Floods of the Panjhra and Girna.

Immense damage to dams and water channels. Over and above this the loss of property was estimated at 160 lakhs of rupees. 5,500 families left destitute besides Bhils and other forest tribes.

Government gave Rs. 5,000 for free distribution and large *tagai* advances. Private subscriptions amounted to Rs. 35,000 distributed among 1,492 families and Rs. 70,000 were advanced as *tagai* to 1,164 persons

1875—*Khandesh, 6th July.*

Sudden local rainfall so swelled the Arunavati that it flooded Shirpur town, the water standing 6 feet deep.

Property worth Rs. 32,000 destroyed.

Ahmedabad, 21st September.

Highest flood on record, but not due to local rainfall.

Ahmedabad city flooded. Railway and Ellis Bridges destroyed (4 lakhs). Nearly 4,000 houses and property valued at 16 lakhs of rupees destroyed. Outside the city 101 villages on both banks of the Sabarmati flooded. 4,000 acres of land assessed at Rs. 13,500 permanently or temporarily injured by sand deposits. Property estimated at 14 lakhs of rupees lost.

Private subscriptions amounted to 14½ lakhs of rupees. Government granted ½ lakh and 1 lakh for advances to purchase seed, cattle and implements. Remissions of revenue not necessary.

1876—*Surat, 26th August.*

26 inches of rain in 24 hours. A week afterwards another flood followed.

Khandesh, 5th September.

The back water from a heavy flood in the Tapti overflowed its tributaries, the Girna, Anjani and Arunavati.

Much damage to crops.

1882—*Bijapur, November.*

Flood of the Ilkal Nala in the Hungund taluka. The average rainfall is 15 inches; but inches fell in one day on 26th November.

266 houses destroyed with much field stock and produce. Loss of property Rs. 30,000.

Private subscriptions reached Rs. 15,000 in Bombay. The Municipality built protective work costing Rs. 18,000.

1883—*Surat.*

Heavy flood of the Tapti caused by heavy July rain. The water commenced rising on 2nd July at 7 p.m. and began to subside from the 6th idem at about 10 a.m.

About ⅛ of the city was under water from 1 to 20 feet deep. Numerous cattle drowned but loss of human life small. 10,000 houses were more or less inundated. The damage to property estimated at Rs. 2,05,400. Railway communication stopped and trains detained for 2 days owing to flood-wat r passing over the Amroli and Kankra Khadi bridges. *Bajri* crop affected about 50 per cent. in the Chorasi taluka.

A fund was raised in Bombay for the relief of the sufferers.

1884—*Surat and Broach.*

Heavy flood in the Kim and Tapti by heavy rain in September, in Surat and Broach and in Khandesh.

Kharif crops particularly *jowari* damaged in Broach. In Surat damage to property and crops.

1891-92—*Broach.*

Within 24 hours 23 inches of rain fell in July.

Considerable damage to property and some loss of life.

1892-93—*Gujarat.*

A heavy down pour of rain in September.

Caused great damage to property and breached the Railway line in several places stopping all communication with Bombay for several days.

1894-95—*Gujarat.*

July rain was very heavy and was accompanied by floods. The Tapti was in floods.

1896—*Nasik.*

Flood of the Mosam river.

Damage to property in the town of Malegaon to the extent of Rs. 30,000 was done. There were no deaths. Thirty houses destroyed.

1905—*Ahmedabad.*

Heavy cyclonic rain between 23rd and 25th July (28 inches at Ahmedabad).

Caused considerable damage to property and crops by floods and by bursting of tanks and irrigation bunds. The talukas of Daskroi, Sanand, Viramgaon and Dholka suffered most severely, the damage to houses alone amounting to 34,000 houses and 12·5 lakhs of rupees.

About Rs. 1,06,000 were collected in subscriptions and distributed to the needy and very poor through committees appointed for the purpose.

1909—*Ratnagiri.*

In July in Chiplun town eleven inches of rain fell in eight hours, the water of the river rose by four feet higher than the highest floodlevel. Half of the town was submerged.

Many houses collapsed. Damage to the extent of eighty thousand rupees was caused to the property of the people.

1913—*Satara.*

Walwa taluka was visited by destructive floods.

In Satara, crops in riveraine places were washed away.

Broach.

In Broach there occurred two floods on the Nerbuda in July-August. The river was believed to have reached on this occasion the highest level recorded in the last quarter of a century.

Besides the washing of crops along the bank of the river, hundred head of cattle were swept away. No human life was however lost.

1914—*Satara.*

In Satara, destructive flood occurred in the Karad Taluka.

Washed away crops in riveraine places.

Belgaum.

In Belgaum the Malprabha was in floods.

Much damage to crops was done and many houses collapsed.

Rs. 20,000 were given as *tagai* for building houses.

There were also floods of Ghatprabha and Krishna, Vedganga and Dudganga.

Damage was done in Gokak and Chikodi talukas but it was slight.

Bijapur.

There were destructive floods in this year in the district.

Floods caused much damage to buildings and to village sites. Grain stored in pits was also destroyed.

Loss to buildings was made good to some extent in deserving cases by private contributions.

Kanara, Kolaba and South Gujarat.

Excessive rain in July.

Heavy floods and inundation of extensive areas and washing away of crops in many low-lying places was the result.

1916—*Karnatak.*

There was excessive rain in November.

Very considerable damage to property and to standing crops and some loss of human life occurred.

1919—*Kaira.*

Rivers were in high floods.

Young crops, especially in low-lying places, were swept away.

1923—*Dharwar.*

The rivers Varda and Tungabhadra flooded.

Damage to some ten villages was caused.

Kanara.

There were heavy floods on the Sherwati and other rivers in the coastal tracts and also in Supa peta.

Damage done to low-lying lands was almost entirely repaired by re-sowing.

Kolaba.

In July heavy rain fell in the Sahyadri hills and the rivers running from the hills flooded.

A number of fields were swept away. Besides considerable damage to life and property was done.

APPENDIX E—Distribution of Areas according to Liability to Famine.

District.	Very liable to famine.			Less liable to famine.			Practically safe from famine.		
	Taluka or part of Taluka.	Area in square miles.	Population 1921.	Taluka or part of Taluka.	Area in square miles.	Population 1921.	Taluka or part of Taluka.	Area in square miles.	Population 1921.
Ahmedabad ..				The whole district.	3,824	890,911			
Kaira				The whole district.	1,596	710,982			
Panch Mahals ..				The whole district.	1,606	374,860			
Broach							The whole district.	1,468	307,745
Surat							The whole district.	1,651	674,351
West Khandesh ..				The whole district.	6,401	641,847			
East Khandesh ..				The whole district.	4,551	1,075,837			
Nasik	Yeola ..	409	48,408	Nasik (½) ..	235	67,315	Nasik (½) ..	235	67,314
	Nandgaon ..	446	48,541	Sinnar ..	518	59,575	Igatpuri ..	394	76,075
	Malegaon ..	777	100,888	Niphad ..	408	76,810	Dindori ..	532	63,802
				Baglan ..	599	64,798	Peint ..	433	53,428
				Kalvan ..	521	58,656			
				Chandor ..	370	47,161			
	Total ..	1,632	197,837		2,651	374,115		1,594	260,624
Ahmednagar ..	The whole district except Akola.	6,030	662,944	Akola (½) ..	290	34,504	Akola (½) ..	290	34,304
Poona	Haveli (½) ..	158	85,932	Haveli (½) ..	314	171,862	Haveli (½) ..	158	85,932
	Junnar (½) ..	148	24,706	Khed (½) ..	323	51,640	Mulshi ..	193	25,654
	Sirur ..	601	60,834	Junnar (½) ..	148	24,706	Maval ..	386	71,629
	Purandhar (½) ..	238	35,559	Ambegaon (½) ..	58	8,936	Khed (½) ..	323	51,641
	Baramati ..	658	98,690	Purandhar (½) ..	238	35,560	Junnar (½) ..	296	49,414
	Dhond ..	378	38,999				Ambegaon (½) ..	172	26,888
	Indapur ..	567	60,531						
	Total ..	2,748	405,251		1,081	292,704		1,528	311,078
Sholapur ..	The whole district except Barsi.	3,959	609,161	Barsi ..	597	132,846			
Satara	Khandala ..	152	22,378	Satara (½) ..	170	55,949	Satara (½) ..	169	55,949
	Valva ..	304	108,027	Koregaon ..	345	71,579	Jaoli ..	337	52,014
	Man ..	638	55,918	Wai ..	236	59,714	Mahabaleshwar ..	86	15,830
	Khatav ..	502	79,424	Karad ..	377	130,706	Patan ..	505	113,869
	Khanapur ..	502	74,174				Shirala ..	245	52,102
	Tasgaon ..	338	78,826						
	Total ..	2,436	418,747		1,130	317,748		1,344	289,764

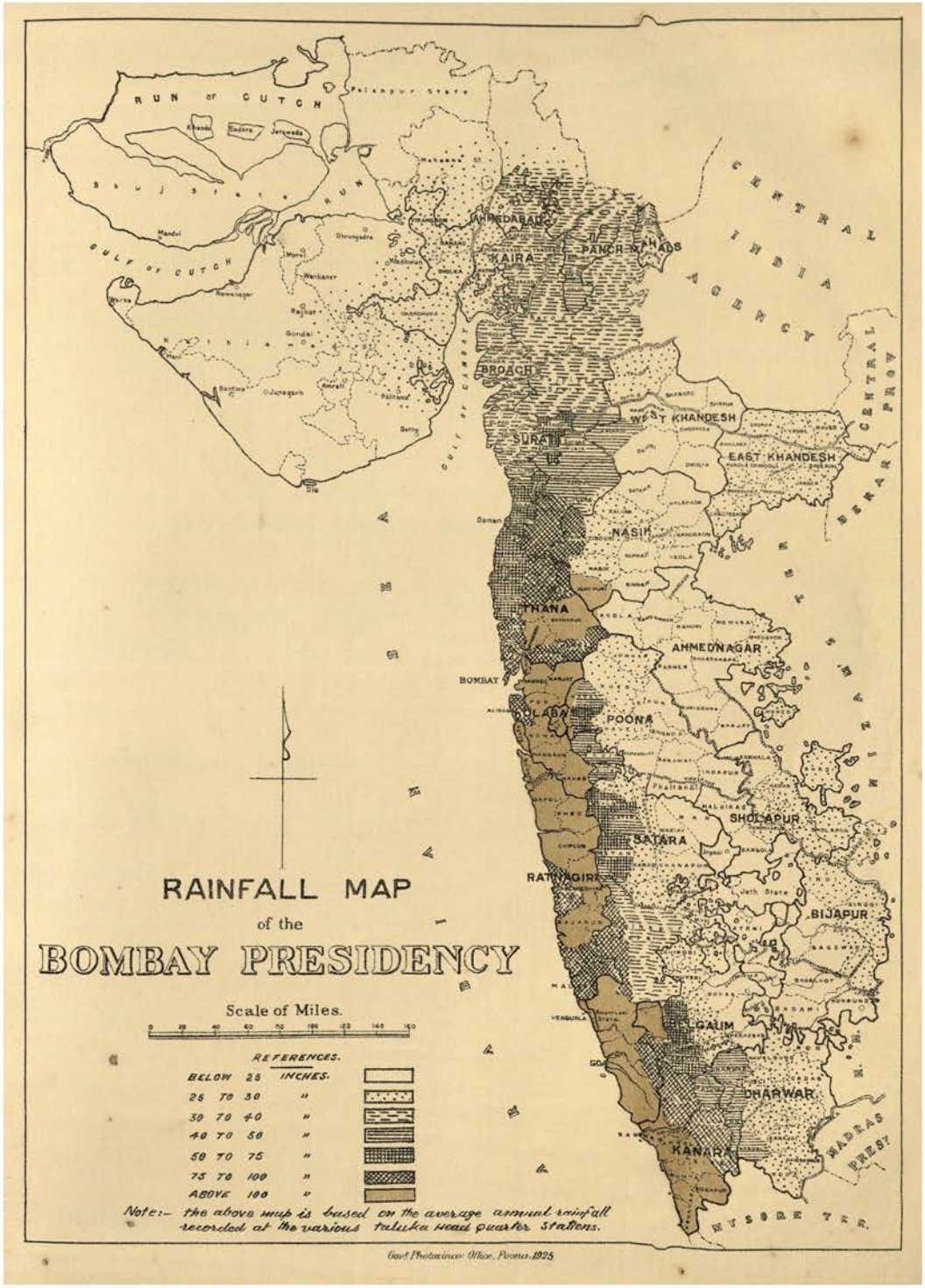
District.	Very liable to famine.			Less liable to famine.			Practically safe from famine.		
	Taluka or part of Taluka.	Area in square miles.	Population 1921.	Taluka or part of Taluka.	Area in square miles.	Population 1921.	Taluka or part of Taluka.	Area in square miles.	Population 1921.
Belgaum	Parasgad ..	638	100,266	Sampgaon ..	409	112,901	Belgaum ..	644	143,461
	Gokak (½) ..	168	37,184	Gokak (½) ..	503	96,551	Khanapur ..	633	70,592
	Chikodi (½) ..	123	40,921	Chikodi (½) ..	371	122,762			
	Athni ..	779	124,678	Hukeri ..	341	108,680			
	Total ..	1,708	298,049		1,626	440,894		1,277	214,053
Bijapur	The whole district.	5,707	796,876						
	Gadag ..	699	139,344	Dharwar (½) ..	216	54,153	Dharwar (½) ..	216	54,152
	Navalgund ..	567	103,610	Hubli (½) ..	253	96,751	Hubli (½) ..	78	32,250
	Ron ..	432	103,046	Bankapur (½) ..	258	56,623	Kalghatgi ..	275	59,375
							Bankapur (½) ..	86	18,874
							Hangal ..	299	62,477
Dharwar				Ranebennur (½)	203	48,824	Kod ..	400	83,191
				Karajgi (½) ..	332	71,422	Ranebennur (½)	267	48,824
							Karajgi (½)	110	23,808
	Total ..	1,698	346,800		1,242	327,773		1,666	363,151
Thana							The whole district.	3,434	759,916
Bombay Suburban ..							The whole district.	142	152,840
Kolaba							The whole district.	2,169	562,942
Ratnagiri ..							The whole district.	3,989	1,354,244
Kanara							The whole district.	3,946	401,727

Abstract.

Nature of Tract.	Area.		Population.	
	Total	Per cent.	Total.	Per cent.
	Sq. miles.			
Very liable to famine	25,918	33·6	3,734,865	25·2
Less liable to famine	26,595	34·5	5,614,824	37·9
Practically safe from famine.. ..	24,498	31·9	5,486,739	36·9
Total ..	77,011	100·0	14,836,428	100·0

APPENDIX F—Rain Return Showing the Average Monthly Fall.

Stations.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total.	
	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.	In.	Cts.
Eastern Districts.																										
West Khandesh.																										
1. Dhulia	0	24	0	11	0	5	0	8	0	38	5	12	5	40	3	76	5	2	1	52	0	72	0	23	22	54
2. Sakri (Pimpalner)	0	21	0	8	0	5	0	6	0	46	4	3	5	20	2	50	3	54	1	47	0	58	0	3	18	25
3. Pimpalner D.	0	24	0	9	0	6	0	6	0	53	4	67	6	52	3	67	3	88	1	41	0	60	0	5	20	94
4. Shwa D.	0	39	0	9	0	9	0	14	0	56	3	9	3	27	2	98	3	86	1	96	0	46	0	5	20	95
5. Nandurbar	0	28	0	7	0	4			0	43	3	35	4	35	3	11	4	86	1	11	0	34	0	3	23	63
6. Navapur P.	0	26	0	12	0	3	0	4	0	41	3	41	10	69	10	41	5	91	0	85	0	36	0	4	23	0
7. Taloda	0	23	0	3	0	3	0	1	0	38	5	85	10	27	6	42	4	16	0	85	0	33	0	4	28	81
8. Shahada	0	35	0	5	0	3	0	1	0	41	5	14	8	10	4	86	4	14	0	96	0	36	0	5	24	56
9. Shirpur	0	18	0	14	0	4	0	8	0	30	4	34	7	75	4	83	3	70	0	99	0	40	0	6	22	84
10. Sindkheda	0	21	0	18	0	4	0	5	0	19	4	71	5	98	3	55	3	90	1	10	0	49	0	8	20	48
East Khandesh.																										
1. Jalgaon	0	34	0	9	0	12	0	11	0	38	4	83	7	93	6	39	5	61	1	11	0	53	0	12	29	6
2. Chalisgaon	0	26	0	11	0	17	0	14	0	57	5	6	6	49	4	79	6	97	1	46	0	60	0	13	26	75
3. Padoon	0	24	0	7	0	12	0	10	0	48	5	6	7	40	6	6	7	38	1	58	0	21	0	20	29	56
4. Bhadgaon P.	0	33	0	11	0	10	0	16	0	49	5	23	8	5	6	62	6	36	1	33	0	20	0	20	28	35
5. Erandol	0	24	0	19	0	4	0	6	0	43	5	23	8	5	5	62	5	30	0	91	0	58	0	10	28	3
6. Chopda	0	27	0	14	0	6	0	10	0	57	4	99	8	31	5	50	5	22	0	91	0	55	0	13	26	65
7. Amalner	0	23	0	17	0	7	0	8	0	43	5	85	8	10	5	22	4	83	1	21	0	53	0	13	24	95
8. Parola	0	24	0	15	0	11	0	5	0	60	5	85	7	43	6	2	5	21	1	14	0	69	0	12	27	52
9. Jamner	0	35	0	9	0	19	0	13	0	58	5	87	7	86	6	98	5	40	1	30	0	58	0	13	29	44
10. Bhusaval	0	31	0	17	0	15	0	14	0	54	5	32	8	75	5	96	5	33	1	18	0	58	0	19	28	62
11. Edalabad P.	0	36	0	15	0	15	0	16	0	56	5	16	8	16	6	42	5	5	1	27	0	96	0	15	30	42
12. Yaval	0	36	0	14	0	10	0	10	0	65	5	29	4	77	6	26	5	35	0	93	0	46	0	10	26	92
13. Raver	0	41	0	24	0	16	0	12	0	53	5	29	6	69	5	22	4	85	1	15	0	60	0	33	25	55
Nasik.																										
1. Nasik	0	10	0	4	0	3	0	18	0	92	5	57	8	67	5	9	5	93	2	81	0	46	0	18	29	98
2. Trimbak D.	0	13	0	4	0	4	0	8	0	88	13	40	35	15	26	72	11	55	3	32	0	63	0	6	92	20
3. Igatpuri	0	11	0	4	0	4	0	16	0	90	20	92	49	74	36	23	16	59	3	75	0	60	0	15	128	81
4. Sinnar	0	10	0	4	0	3	0	20	0	88	4	20	3	38	3	47	4	95	2	53	0	50	0	20	22	52
5. Niphad	0	9	0	3	0	2	0	7	0	78	4	93	3	15	3	44	3	94	1	90	0	60	0	20	22	59
6. Pimpalgaon D.	0	7	0	3	0	3	0	11	0	91	4	93	6	8	3	61	5	2	1	99	0	48	0	15	23	57
7. Yeola	0	16	0	7	0	3	0	10	0	70	4	23	5	46	4	5	5	86	1	98	0	46	0	15	24	62
8. Nandgaon	0	22	0	6	0	6	0	10	0	75	5	38	4	64	3	57	6	94	1	99	0	90	0	21	24	82
9. Malegaon	0	21	0	7	0	6	0	6	0	89	4	95	4	43	3	74	5	81	1	90	0	61	0	19	24	17
10. Satana (Baglan)	0	16	0	6	0	4	0	9	0	74	3	94	3	74	3	34	3	91	1	20	0	60	0	18	17	73
11. Kalvan	0	12	0	7	0	5	0	13	1	15	4	90	7	41	4	64	5	52	2	41	0	68	0	14	27	20
12. Chandor	0	14	0	6	0	8	0	10	1	33	5	10	6	92	6	22	5	33	0	63	0	82	0	21	26	38
13. Dindori	0	11	0	4	0	4	0	14	0	81	5	63	8	94	5	88	5	35	2	33	0	63	0	15	30	6
14. Peint	0	12	0	9	0	1	0	2	0	74	11	29	32	2	25	95	11	1	2	49	0	45	0	5	84	74
Ahmednagar.																										
1. Ahmednagar	0	17	0	13	0	10	0	23	0	92	4	57	3	61	2	77	6	84	2	78	0	83	0	56	23	50
2. Parner	0	20	0	9	0	6	0	18	0	97	4	80	3	88	3	80	5	72	2	88	0	80	0	53	25	10
3. Shrigonda	0	15	0	5	0	7	0	24	0	97	3	56	2	39	2	4	5	72	2	76	0	93	0	45	19	33
4. Karjat	0	15	0	7	0	8	0	28	1	11	4	94	3	64	2	67	4	19	2	35	0	80	0	40	20	88
5. Mirajgaon D.	0	20	0	9	0	8	0	28	1	11	4	94	3	64	2	56	5	72	1	94	0	90	0	21	21	58
6. Jamkhed P.	0	22	0	16	0	18	0	22	0	84	4	36	3	55	3	74	5	26	2	4	0	80	0	49	25	46
7. Shevgaon	0	19	0	14	0	13	0	22	0	70	4	56	3	23	4	47	5	47	2	40	0	89	0	43	25	53
8. Pathardi P.	0	43	0	29	0	27	0	26	0	56	4	50	3	92	3	46	5	45	2	63	0	71	0	83	26	32
9. Nevasa	0	22	0	8	0	11	0	17	0	72	4	33	3	61	3	39	5	39	2	33	0	61	0	41	25	81
10. Rahuri	0	18	0	12	0	8	0	28	0	85	4	72	3	43	1	95	5	30	1	95	0	61	0	21	19	68
11. Kopargaon	0	17	0	8	0	9	0	27	0	73	4	30	3	49	3	43	5	18	1	85	0	65	0	20	19	13
12. Sangamner	0	19	0	9	0	9	0	21	0	76	3	79	3	53	3	44	4	44	1	66	0	65	0	15	19	01
13. Akola	0	19	0	3	0	4	0	28	0	91	4	59	5	70	3	5	3	9	4	32	2	12	0	59	0	15
Poona.																										
1. Poona (Haveli)	0	9	0	5	0	5	0	60	1	42	3	35	7	20	3	68	5	7	4	1	1	11	0	23	28	86
2. Paud P. (Mulsi)	0	9	0	4	0	4	0	30	1	36	3	26	5	25	3	57	3	43	4	21	1	11	0	21	29	59
3. Vadgaon (Maval)	0	7	0	3	0	3	0	34	0	76	3	22	6	14	5	1	9	39	5	52	2	54	0	67	0	14
4. Lonavli D.	0	6	0	3	0	3	0	24	0	99	2	67	6	5	6	41	6	92	19	44	3	93	0	87	0	41
5. Khed	0	7	0	7	0	5	0	26	1	5	4	95	6	50	5	30	4	70	3	19	1	70	0	70	0	13
6. Alandi D.	0	8	0	6	0	4	0	30	0	99	2	46	9	69	5	53	2	99	4	36	2	65	0	80	0	14
7. Ghode P. (Ambegaon)	0	8	0	5	0	5	0	39	0	98	2	63	6	5	5	41	4	54	3	41	1	48	0	80	0	44
8. Junnar	0	10	0	17	0	9	0	24	0	85	2	93	8	65	5	12	4	75	2	78	0	97	0	21	29	16
9. Ghodnadi (Sirur)	0	13	0	9	0	9	0	27	1	11	4	56	3	3	3	71	6	30	2	54	0	89	0	22	20	96
10. Talegaon Dhamdhere D.	0	13	0	13	0	11	0	41	1	18	4	15	3	80	3	29	4	92	3	33	1	97	0	23	29	41
11. Saswad (Purandhar)	0	4	0	8	0	9	0	54	1	18	4	15	4	93	2	39	4	28	3	33	1	97	0	24	22	20
12. Jejuri D.	0	8	0	5	0	6	0	29	1	29	4	29	4	8	3	8	4	8	3	34	1	97	0	24	19	49
13. Baramati	0	18	0	8	0	11	0	54	1	52	3	75	2	29	2	2	5	82	3	20	1	93	0	42	20	84
14. Dhond P.	0	11	0	8	0	8	0	36	1	14	3	56	2	74	2	51	5	26	2	17	0	80	0	38	18	23
15. Indapur	0	14	0	9	0	11	0	36	1	14	3	56	2	74	2	51	6	46	3	36	0	99	0	34	22	0
Sholapur.																										
1. Sholapur	0	15	0	7	0	20	0	46	1	5	4	67	4	20	4	54	7	71	3	2	1	5	0	46	27	55
2. Barsi	0	13	0	10	0	20	0	39	0	99	5	5	4	64	4	76	8	26	2	98	0	98	0	50	28	88
3. Madha	0	21	0	11	0	20	0	41	0	92	4	63	4	76	4	84	8	10	3	76	0	76	0	57	29	56
4. Karmala	0	12	0	10	0	20	0	29	0	98	4	6	3	13	3	3	6	92	2	71	0	94	0	37	22	85
5. Pandharpur	0	12	0	10	0	10	0	52	0	91	4	12	3	14	3	21	7	36	3	36	0	83	0	35	25	8
6. Sangola	0	11	0	5	0	5	0	46	1	21	4	57	3	43	3	43	6	53	3	24	1	14	0	33	27	65
7. Malsiras	0	16	0	14	0	3	0	43	1	16	2	25	2	28	2	13	6	26	3	1	0	90	0	46	20	18
8. Akluj D.	0	19	0	3	0	3	0	30	0	96	2	85	2	21	2	13	5	27	2	7	0	90	0	55	17	59
Satara.																										
1. Satara	0	9	0	8	0	14	0	72	1	62	4	6	8	80	13	51	7	51	4	25	3	43	0	77	0	32
2. Koregaon	0	15	0	7	0	8	0	68	1	52	3	52	5	21	8	34	6	76	4	39	3	27	0	89	0	28
3. Wai	0	12	0	6	0	6	0	78	1	22	5	21	8	34	4	77	4	39	3	27	0	93	0	23	0	16
4. Khandala P.	0	25	0	4	0	4	0	72	1	92	4	49	6	22	4	87	4	23	3	19	0	91	0	71	0	29
5. Panchgani D.	0	13	0	10	0	9	0	30	1	13	3	11	6	21	4	13	4	34	3	6	3	79	0	92	0	57
6. Medha (Javli)	0	9	0	12	0	6	0	1	1	36	4	45	6	34	4	16	4	91	3	58	0	29	0	71	0	23
7. Mahabaleshwar P.	0	14	0	8	0	13	0	1	34	1	92	4	22	6	84	5	10	4	51	3	28	1	26	0	72	0
8. Patan	0	8	0	6	0	6	0	19	0	75	1	27	4	11	8	26	6	2	5	40	3	95	2	28	0	26
9. Karad	0	10	0	6	0	10	0	20	0	77	1	27	4	11	8	26	6	2	5	40	3	95	2	28	0	26
10. Islampur (Valva)	0	17	0	8	0	11	0	18	0	98	1	57	4	12	5	55	3	88	3	45	2	12	0	36	25	0
11. Shirala P.	0	18	0	7	0	10	0	18	0	98	1	57	4	12	5	55	3	88	3	45	2	12	0	36	25	0
12. Dahiwadi (Man)	0	16	0	10	0	11	0	61	1	18	4	42	3	80	3	5	2	32	1	63	5	34	0	33	19	3
13. Mhasvad D.	0	17	0	7	0	14	0	70	1	18	4	42	3	80	3	22	2	73	1	63	6	22	0	33	19	3
14. Vadoj (Khatav)	0	19	0	12	0	14	0	68	1	64	4	0	5	65	3	80	4	67	3	48	0	80	0	36	25	52
15. Puseswli D.	0	14	0	9	0	21	0	68	1	64	4	0	5	65	3	80	4	67	3	48	0	80	0	36	25	52
16. Vita (Dhanapur)	0	14	0	9	0	12	0	61	1	64	4	0	5	65	3	80	4	67	3	48	0	80	0	36	25	52
17. Tasgaon	0	18	0	6	0	20	0	1	90	3	76	4	72	3	8	4	99	4	87	3	32	0	31	25	44	
Belgaon.																										
1. Belgaum	0	13	0	4	0	32			66	2	71	8	11	16	34	9	39	5	6	4	78	64	0	37	50	55
2. Chanolpad P.	0	13	0	5	0	33			45	2	81	21	78	42	10	22	17	20	4	80	3	53	1	48	103	85
3. Khanapur	0	7	0	3	0	28			57	2	29	8	81	24	7	31	4	51	4	13	3	58	1	38	66	2
4. Sampgaon	0	5	0	3	0	28			62	2	81	4	44	5	34	3	67	4	14	4	86	48	0	40	29	12
5. Sanandati (Parasgad)	0	8	0	3	0	26			29	2	29	2	18	4	25	2	69	5	11	4	2	81	0	40	24	17
6. Murgod P.	0	11	0	4	0	29			38	2	53	3	41	2	91	2	61	3	94	5	11	44	0	40	24	32
7. Gokak	0	12	0	3	0	36			47	2	36	3	41	2	91	2	61	3	94	5	11	67	0	36	24	32
8. Chikodi	0	8	0	3	0	31			61	2	47	3	40	2	43	2	76	3	94	5	11	64	0	50	24	50
9. Hukeri	0	6	0	0	0	43			66	2	49	3	83	4	76	3	9	3	94	5	38	50	0	36	26	33
10. Athni	0	12	0	3	0	14			29	2	33	3	13	2	85	2	80	4	58	4	16	21	0	29	23	93
Bijapur.																										
1. Bijapur	0	9	0	6	0	22			80	1	91	3	57	3	25	2	88	6	53	3	88	52	0	31	23	28
2. Indi	0	8	0	10	0	21			63	0	92	3	82	3	21	3	98	7	4	3	61	27	0	28	24	95
3. Sindgi	0	8	0	11	0	38			77	1	0	3	82	3	21	3	98	6	41	3	47	33	0	44	25	7
4. Bagewadi	0	7	0	6	0	20			0	93	1	78	3	96	3	21	3	98	6	41	3	47	33	0	44	25	45
5. Muddebihal	0	7	0	12	0	18			62	1	64	3	21	2	96	2	53	3	82	7	15	41	0	21	25	83
6. Bagalkot	0	3	0	9	0	20			63	1	78	2	96	2	79	2	36	5	93	3	25	35	0	26	22	5
7. Bilgi P.	0	7	0	5	0	20			0	92	1	78	2	96	2	79	2	36	5	93	3	25	35	0	26	22	5
8. Badami	0	7	0	5	0	22			0	94	2	7	2	63	2	50	3	68	7	38	3	25	61	0	34	23	90
9. Hungund	0	8	0	5	0	22			0	94	2	7	2	63	2	50	3	68	7	38	3	25	61	0	34	23	90
10. Ilkal D.	0	6	0	5	0	24			1	3	1	87	2	46	2	81	3	12	6	39	3	79	92	0	38	24	12
Dharwar.																										
1. Dharwar	0	7	0	3	0	29			1	74	3	9	4	58	6	52	4	57	4	41	5	28	82	0	48	32	88
2. Hubli	0	7	0	9	0	25			1	68	2	76	3	84	4	32	3	31	3	94	4	97	1	99	0	55	27	6
3. Kalghatgi	0	7	0	7	0	27			1	27	2	24	3	96	5	44	3	54	3	5	4	52	1	93	0	53	24	64
4. Shiggaon (Bankapur)	0	7	0	3	0	21			1	27	2	27	3	96	5	44	3	54	3	5	4	52	1	93	0	53	24	64
5. Hangal	0	7	0	3	0	21			1	27	2	24	2	90	3	88	4	52	3	88	4	65	1	80	0	63	24	20
6. Hirekerur (Kod)	0	7	0	10	0	12			1	40	2	15	2	9	5	6	3	82	3	78	3	19	4	65	1	92	0	60	28	91
7. Ranebennur	0	7	0	8	0	11			1	37	2	27	2	9	5	6	3	82	3	78	3	19	4	65	1	92	0	60	28	91
8. Haveri (Karajgi)	0	8	0	4	0	12			1	40	2	51	2	65	2	78	3	98	3	80	3	76	4	80	1	53	24	29
9. Gadag	0	7	0	5	0	25			1	40	2	51	2	65	2	78	3	98	3	85	4	27	4	71	1	41	24	14
10. Mundargi P.	0	7	0	6	0	27			1	40	2	47	2	50	2	78	3	98	3	85	4	27	4	71	1	41	24	14
11. Navalgund	0	7	0	3	0	17			1	36	2	60	2	24	2	59	3	3	3	86	4	94	4	40	1	42	24	25
12. Nargund P.	0	10	0	12	0	18			1	46	2	58	2	24	2	59	3	3	3	86	4	94	4	40	1	42	24	25
13. Ron	0	8	0	8	0	15			0	90	2	17	3	44	2	33	3	74	6	16	4	16	4	45	0	40	25	79
Kanara.																										
1. Karwar	0	5	0	5	0	6			0	49	3	60	36	81	38	35	20	44	11	13	5	49	1	70	0	20	118	31
2. Ankola	0	5	0	8	0	8			0	44	3	23	38	71	42	93	23	41	11	75	6	45	2	18	0	14	129	17
3. Kumta	0	6	0	7	0	8	0	3	0	28	3	72	36	43	39	43	19	81	11	82	6	76	2	69	0	17	140	21
4. Honawar	0	6	0	6	0	7	0	2	0	58	3	56	40	4	43	80	26	14	13	95	7	54	3	98	0	32	137	85
5. Bhatkal P.	0	8	0	22	0	5	0	7	0	80	4	56	41	63	37	80	29	96	13	96	7	54	3	98	0	34	148	61
6. Haliyal	0	7	0	9	0	7	0	3	0	58	3	22	13	56	8	32	5	18	5	17	4	46	2	38	0	46	86	4
7. Supa P.	0	7	0	6	0	7	0	3	0	78	2	19	7	38	6	34	3	97	6	42	4	91	2	77	0	90	84	
8. Yellapur	0	7	0	6	0	7	0	3	0	31	2	49	3	33	3	38	3	48	5	29	4	17	2	16	0	41	108	60
9. Mundgod P.	0	10	0	8	0	4	0	34	0	58	2	63	2	74	2	49	3	19	3	7	4	67	4	99	1



RAINFALL MAP
of the
BOMBAY PRESIDENCY

Scale of Miles.

0 20 40 60 80 100 120 140 160

REFERENCES.

BELOW 25	INCHES.	
25 TO 30	"	
30 TO 40	"	
40 TO 50	"	
50 TO 75	"	
75 TO 100	"	
ABOVE 100	"	

Note:- the above map is based on the average annual rainfall recorded at the various taluka head quarter stations.

Govt. Photozincco Office, Poona. 1925.

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.
Karachi.													
1. Karachi	0 52	0 45	0 35	0 17	0 8	0 90	2 93	1 46	0 49	0 1	0 13	0 13	7 62
2. Manora	0 4	0 31	0 39	0 27	0 10	0 64	1 56	2 46	0 50	0 2	..	0 17	6 46
3. Mirpur Sakro ..	0 16	0 16	0 9	0 4	0 32	0 41	1 63	1 86	0 68	0 6	..	0 3	5 44
4. Ghorabari ..	0 14	0 13	0 19	0 9	0 33	0 55	2 81	2 27	0 68	0 12	..	0 5	7 34
5. Keti Bandar ..	0 26	0 22	0 13	0 20	0 23	0 96	1 29	1 62	0 47	0 21	0 2	0 14	5 77
6. Shahbunder (Ladhim) ..	0 19	0 25	0 21	0 4	0 13	0 77	5 13	2 39	0 78	0 3	0 1	0 3	9 96
7. Jati	0 5	0 17	0 10	0 13	0 99	0 78	4 48	2 7	0 61	0 41	0 1	0 9	9 29
8. Sujawal	0 18	0 11	0 8	0 7	0 35	0 47	3 7	2 55	0 87	0 10	0 1	0 2	7 88
9. Mirpur Batoro ..	0 16	0 17	0 14	0 3	0 35	0 43	3 64	2 94	1 18	0 3	0 1	0 3	9 11
10. Tatta	0 23	0 35	0 20	0 16	0 15	0 74	4 9	2 20	0 58	0 1	0 11	0 6	8 88
11. Jerruck	0 19	0 29	0 26	0 2	0 19	0 58	3 5	1 70	0 42	..	0 1	0 6	6 77
12. Kotri	0 7	0 17	0 14	0 7	0 45	0 31	1 80	2 38	1 4	0 12	..	0 8	6 63
13. Murabad	0 2	0 10	0 9	0 19	0 13	0 7	0 28	2 55	0 42	..	..	0 3	3 88
14. Bula Khan's Thano ..	0 16	0 31	0 9	0 13	0 53	0 42	1 85	2 71	1 2	0 3	..	0 12	7 37
Hyderabad.													
1. Hyderabad ..	0 21	0 28	0 20	0 6	0 16	0 44	3 6	2 6	0 65	0 1	0 7	0 5	7 25
2. Hala	0 17	0 39	0 50	0 9	0 33	0 41	2 17	2 36	0 57	0 1	0 2	0 9	6 91
3. Tando Alahyar ..	0 8	0 11	0 4	0 12	0 45	0 38	0 70	2 59	0 54	0 3	..	0 6	5 10
4. Dera Mahbat ..	0 14	0 20	0 6	0 2	0 21	0 32	1 79	3 3	0 71	0 6	..	0 12	6 66
5. Tando Bago ..	0 7	0 15	0 17	0 1	0 20	0 22	2 58	2 74	1 40	0 8	0 10	0 1	8 73
6. Badin	0 4	0 13	0 7	0 3	0 29	0 44	2 29	3 76	1 71	0 14	0 15	..	9 35
7. Guni	0 12	0 19	0 10	..	0 27	0 56	2 59	2 76	0 92	0 20	..	0 5	7 76
Thar and Parkar.													
1. Mirpur Khas ..	0 6	0 9	0 11	0 9	0 27	0 20	0 95	1 79	1 3	0 8	0 1	0 8	4 76
2. Pithoro (Sanaro) ..	0 7	0 8	0 12	0 1	0 38	0 38	2 55	2 83	1 2	0 30	0 4	0 1	7 77
3. Jamaahad ..	0 9	0 6	0 11	0 1	0 57	0 26	1 91	3 18	1 48	0 30	0 7	0 2	8 6
4. Diplo	0 7	0 9	0 9	..	0 44	0 24	2 5	3 22	1 43	0 25	0 2	0 2	7 89
5. Diplo	0 1	0 2	0 2	0 5	0 67	0 50	2 78	2 68	1 33	0 53	..	..	8 99
6. Mimi	0 1	0 2	0 1	0 2	0 68	1 26	3 72	4 74	2 14	0 52	0 5	..	13 17
7. Nagar Parkar ..	0 2	0 17	0 11	0 4	0 34	0 62	5 58	5 38	1 76	0 43	0 10	0 2	14 57
8. Chachra	0 4	0 5	0 5	0 1	0 30	0 63	2 27	3 18	2 96	0 74	0 5	0 1	10 29
9. Umarkot	0 15	0 12	0 19	0 7	0 11	0 55	2 98	2 30	1 33	0 8	0 4	0 3	7 95
10. Khipro	0 8	0 13	0 8	..	0 36	0 18	1 83	3 63	1 7	0 15	0 2	0 4	6 92
11. Sanghar	0 16	0 13	0 3	0 14	0 21	0 27	1 73	0 68	..	..	..	0 15	4 17

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.	In. cts.
Nawabshah.													
1. Nawabshah (Nasrat) ..	0 5	0 12	0 10	0 5	0 31	0 40	0 60	3 85	0 89	..	..	0 5	6 42
2. Sinjhoro	0 3	0 11	0 8	0 15	0 15	0 22	0 92	2 75	0 79	0 7	..	0 10	5 43
3. Shahdadpur	0 3	0 14	0 16	0 16	0 24	0 20	0 66	2 73	0 78	0 1	..	0 7	5 18
4. Tando Adam	0 4	0 16	0 20	0 2	0 10	0 30	0 72	1 98	0 80	..	..	0 58	4 50
5. Sakrand	0 7	0 15	0 11	0 13	0 19	0 12	0 54	4 78	1 14	..	..	0 7	7 30
6. Moro	0 6	0 11	0 11	0 15	0 22	0 8	1 86	3 59	1 4	..	..	..	7 22
7. Nawabshir	0 20	0 28	0 23	0 4	0 10	0 35	1 30	0 56	..	0 2	0 14	4 31
8. Tharu Shah	0 5	0 16	0 13	0 7	0 12	0 4	0 53	1 72	1 54	0 2	0 4	4 42
9. Kandiaro	0 3	0 10	0 13	0 7	0 20	0 34	0 66	1 51	1 40	0 1	..	0 7	4 52
Larkana.													
1. Larkana	0 4	0 15	0 23	0 16	0 17	0 14	0 48	1 59	1 30	0 14	0 1	0 3	4 44
2. Labdaro (Dokri) ..	0 8	0 14	0 18	0 21	0 13	0 19	0 25	1 61	1 32	0 21	0 3	0 3	4 56
3. Mehar	0 27	0 28	0 29	0 19	0 9	0 35	0 69	0 93	0 33	0 3	0 2	0 12	3 59
4. Dadu	0 7	0 20	0 11	0 11	0 27	0 2	1 12	2 9	2 13	0 1	..	0 14	6 22
5. Sehwan	0 30	0 31	0 15	0 17	0 14	0 42	1 69	1 49	0 46	0 3	0 6	0 11	5 33
6. Johi	0 10	0 19	0 13	0 25	0 21	0 23	2 5	2 40	1 57	0 2	0 1	0 3	7 19
7. Kakar (Khairpur Nathesahh).	0 8	0 16	0 16	0 14	0 12	0 26	0 63	1 61	1 53	0 8	..	0 8	4 85
8. Nasarabad (Warah) ..	0 9	0 13	0 14	0 15	0 19	0 8	0 66	1 24	1 9	0 39	0 3	0 3	4 22
9. Kambar	0 5	0 16	0 35	0 22	0 13	0 14	0 51	1 0	1 6	0 20	0 3	0 1	5 06
10. Rato-dero	0 2	0 23	0 30	0 11	0 14	0 30	0 37	1 63	0 99	0 11	0 3	0 17	4 40
Sukkur.													
1. Sukkur	0 7	0 17	0 27	0 3	0 15	0 4	0 66	0 79	0 32	0 11	0 1	0 4	2 66
2. Garhi Yasin ..	0 6	0 15	0 21	0 18	0 8	0 1	0 39	1 62	1 49	0 20	..	0 8	4 40
3. Shikarpur	0 25	0 31	0 28	0 14	0 11	0 15	0 64	1 3	0 39	0 3	0 8	0 16	3 55
4. Pano Akil	0 5	0 12	0 40	0 7	0 33	0 3	0 40	0 56	0 54	0 2	..	0 8	2 60
5. Ghotki	0 17	0 13	0 37	0 40	0 17	..	0 54	0 78	0 60	0 7	..	0 5	3 18
6. Ubauro	0 15	0 24	0 30	0 12	0 28	0 6	1 24	2 18	0 64	..	0 1	0 9	5 31
7. Mirpur	0 10	0 17	0 40	0 7	0 29	0 16	0 78	1 72	0 53	..	..	0 8	4 35
8. Rohri	0 21	0 23	0 21	0 15	0 10	0 11	0 78	0 97	0 12	0 1	0 6	0 12	3 7
Upper Sind Frontier.													
1. Jacobabad	0 28	0 29	0 28	0 19	0 13	0 18	1 1	1 11	0 28	0 4	0 8	0 13	4 0
2. Thul	0 7	0 12	0 27	0 12	0 15	0 9	0 70	0 83	0 84	0 30	0 4	0 8	3 61
3. Khanbelar	0 13	0 18	0 23	0 15	0 7	0 21	0 60	0 78	0 45	0 15	..	0 10	3 52
4. Kashmor	0 5	0 11	0 32	0 19	0 36	0 20	1 44	1 21	0 71	0 25	..	0 9	4 93
5. Shahdadkot	0 4	0 28	0 42	0 19	0 15	0 17	0 81	2 22	1 41	0 19	0 4	0 10	6 2

APPENDIX G—Schedule of Normal Prices.

The pre-war normal is based on the average of five years (1909 to 1914 excluding the abnormal year 1912-13). The normal for 1922-23 relates to the Agricultural year from June 1922 to May 1923.

District and Station.	Lbs. per rupee. Pre-war Normal.	1922-23 Normal.	Lbs. per rupee. Pre-war Normal.	1922-23 Normal.
Ahmedabad.	Jowari.		Bajri.	
Head quarter town (Ahmedabad)	26	19	23	14
Average of non-head quarter towns	26	20	22	15
Kaira.	Rice.		Bajri.	
Head quarter town (Mehmedabad)	16	10	24	18
Average of non-head quarter towns	17	10	25	17
Panch Mahals.	Maize		Rice.	
Head quarter town (Godhra)	28	22	14	9
Average of non-head quarter towns	31	23	17	9
Broach.	Jowari.		Wheat.	
Head quarter town (Broach)	25	20	17	11
Average of non-head quarter towns	25	22	17	12
Surat.	Jowari.		Rice.	
Head quarter town (Chorasi)	24	18	14	11
Average of non-head quarter towns	23	17	17	12
West Khandesh.	Jowari.		Bajri.	
Head quarter town (Dhulia)	28	20	25	16
Average of non-head quarter towns	27	21	25	16
East Khandesh.	Jowari.		Bajri.	
Head quarter town (Jalgaon)	28	20	26	15
Average of non-head quarter towns	28	19	26	17
Nasik.	Jowari.		Bajri.	
Head quarter town (Nasik)	25	..	26	15
Average of non-head quarter towns	27	18	26	16
Ahmednagar.	Jowari.		Bajri.	
Head quarter town (Nagar)	30	19	27	15
Average of non-head quarter towns	32	19	29	16
Poona.	Jowari.		Bajri.	
Head quarter town (Poona)	26	18	23	15
Average of non-head quarter towns	28	19	25	15
Sholapur.	Jowari.		Bajri	
Head quarter town (Sholapur)	32	23	30	16
Average of non-head quarter towns	32	23	29	19
Satara.	Jowari.		Bajri.	
Head quarter town (Satara)	25	20	24	18
Average of non-head quarter towns	25	21	24	18
Belgaum.	Jowari.		Bajri.	
Head quarter town (Belgaum)	26	20	26	15
Average of non-head quarter towns	26	22	27	20

District and Station.	Lbs. per rupee. Pre-war Normal.	1922-23 Normal.	Lbs. per rupee. Pre-war Normal.	1922-23 Normal.
Bijapur.	Jowari.		Bajri.	
Head quarter town (Bijapur)	30	23	30	20
Average of non-head quarter towns	31	22	30	19
Dharwar.	Jowari.		Wheat.	
Head quarter town (Dharwar)	27	22	18	13
Average of non-head quarter towns	29	20	19	12
Thana.	Rice.		Ragi.	
Head quarter town (Thana)	16	10	23	..
Average of non-head quarter towns	16	9	27	24
Kolaba.	Rice.		Ragi.	
Head quarter town (Alibag)	18	11	..	..
Average of non-head quarter towns	16	11	28	21
Ratnagiri.	Rice.		Ragi.	
Head quarter town (Ratnagiri)	17	12	24	16
Average of non-head quarter towns	17	17	25	19
Kanara.	Rice.		Ragi.	
Head quarter town (Karwar)	16	11	24	17
Average of non-head quarter towns	17	12	27	19
Karachi.	Jowari.		Bajri.	
Head quarter town (Karachi)	24	16	25	18
Average of non-head quarter towns	26	22	25	19
Hyderabad.	Jowari.		Bajri.	
Head quarter town (Hyderabad)	25	22	24	18
Average of non-head quarter towns	30	20	26	18
Thar and Parkar.	Jowari.		Bajri.	
Head quarter town (Mirpurkhas)	29	19	25	20
Average of non-head quarter towns	26	18	24	16
Nawabshah.	Jowari.		Bajri.	
Head quarter town (Nawabshah)	30	23	26	19
Average of non-head quarter towns	29	24	26	20
Larkana.	Jowari.		Bajri.	
Head quarter town (Larkana)	25	22	26	18
Average of non-head quarter towns	26	22	26	20
Sukkur.	Jowari.		Bajri.	
Head quarter town (Sukkur)	25	22	31	20
Average of non-head quarter towns	26	22	28	21
Upper Sind Frontier.	Jowari.		Bajri.	
Head quarter town (Jacobabad)	27	23	30	22
Average of non-head quarter towns	27	22	30	22

APPENDIX H—Normal yield (lbs. per acre) of Principal Crops in each District of the Bombay Presidency, including Sind.

District.	Rice, (clean).		Wheat.		Spelt.		Jowari.		Bajri.		Barley.		Ragi.		Kodra.		Gram.		Linseed.		Til.		Rapeseed.		Groundnut.		Jambha.		Sugarcane (Gul).		Cotton (cleaned).	
	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.
Bombay Presidency.																																
Ahmedabad ..	..	1,440	1,300	560	..	..	..	K1,080*	..	840	..	..	..	1,440	..	1,320	..	500	..	350	..	400	..	640	..	800	..	..	6,000	..	..	125
Kaira ..	..	1,320	1,300	600	..	..	..	K1,050	..	970	..	..	..	1,440	..	1,275	..	500	..	..	..	400	..	675	..	..	..	..	6,000	..	..	115
Panch Mahals..	..	1,200	1,300	700	..	..	..	K1,190	..	820	..	..	..	1,420	..	1,130	..	600	..	..	..	400	..	600	..	1,000	..	..	5,000	..	..	100
Broach ..	..	900	..	600	..	..	..	R 820	..	700	..	..	..	1,500	..	1,050	..	500	..	..	..	400	..	..	..	..	..	..	7,000	..	..	130
Surat ..	..	1,560	..	560	..	..	..	R 760	..	600	..	..	..	1,200	..	1,120	..	500	..	..	..	400	..	..	2,500	1,000	..	..	7,000	..	..	120
West Khandesh	..	1,080	1,280	600	1,500	..	..	K 720	..	500	..	..	..	900	..	900	1,200	500	..	360	..	400	..	..	2,500	1,250	..	..	7,000	..	..	110
East Khandesh	..	1,080	1,280	600	1,500	..	..	K 720	..	380	..	..	..	900	..	900	1,200	500	..	360	..	400	..	..	2,500	1,250	..	..	7,000	..	..	110
Nasik ..	..	1,080	1,320	460	1,500	..	1,400	R 520	..	360	..	..	1,400	850	..	..	1,200	350	..	360	..	400	..	..	2,500	1,250	..	..	7,000	..	..	100
Ahmednagar ..	..	1,040	1,180	460	1,500	..	1,500	R 540	..	340	..	..	1,400	900	..	..	1,100	380	..	360	..	400	..	..	2,500	1,200	..	..	7,000	..	..	90
Poona ..	..	1,120	1,080	350	1,500	..	1,500	R 500	..	340	..	..	..	990	..	..	1,200	320	..	360	..	400	..	..	2,500	1,250	..	..	7,000	..	..	90
Sholapur ..	..	900	1,080	400	1,500	..	1,500	R 540	..	320	..	..	..	..	..	..	1,200	360	..	360	..	400	..	..	2,500	1,250	..	..	7,000	..	..	90
Satara ..	..	1,120	1,350	480	1,500	..	1,500	R 720	..	360	..	..	..	900	..	..	1,200	380	..	360	..	400	..	..	2,500	1,500	..	..	7,000	..	..	90
Belgaum ..	..	1,140	1,200	560	1,500	..	..	R 800	..	400	..	..	..	900	..	..	..	400	..	360	..	400	..	..	2,500	1,500	..	..	7,000	..	..	100
Bijapur ..	..	800	1,080	400	1,500	..	..	R 540	..	320	..	..	..	..	..	..	..	340	..	360	..	400	..	..	2,500	1,250	..	..	7,000	..	..	90
Dharwar ..	..	1,140	..	500	1,500	..	..	R1,000	..	450	..	..	..	1,200	..	..	..	500	..	360	..	400	..	..	2,500	1,500	..	..	7,000	..	..	120
Thana ..	..	1,200	..	..	..	..	..	..	..	..	..	..	..	770	..	640	..	400	..	..	..	300	..	..	..	1,250	..	..	7,000	..	..	..
Kolaba ..	..	1,200	..	..	..	..	..	..	..	..	..	..	..	800	..	800	..	380	..	..	..	300	..	..	..	1,250	..	..	4,000	..	..	..
Ratnagiri ..	..	1,020	..	..	..	..	..	..	..	..	..	..	..	680	..	675	..	320	..	..	..	300	..	..	..	..	..	..	4,000	..	..	..
Kanara ..	..	1,320	..	..	..	..	..	..	..	..	..	..	..	1,470	..	..	..	480	..	..	..	300	..	..	..	..	..	..	6,000	..	..	..
Average ..	..	1,230	1,250	510	1,500	..	1,550	670	..	400	..	..	1,400	1,060	..	1,100	1,200	410	..	360	..	400	..	625	2,500	1,150	..	..	6,950	..	..	102
Sind.																																
Karachi ..	..	1,314	..	1,330	1,011	..	..	1,383	472	830	277	1,617	1,229	..	..	..	..	..	..	..	..	..	..	359	..	..	..	..	..	..	..	..
Hyderabad ..	..	1,073	..	233	284	..	..	513	..	944	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	769	..
Thar and Parkar	..	1,760	..	800	240	..	..	640	320	640	320	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	480	..	..	480	..	..
Nawabshah ..	..	1,100	..	900	635	..	..	1,100	..	925	..	300	300	..	..	..	..	575	560	..	..	..	..	400	..	..	..	..	..	..	600	..
Larkana ..	..	1,656	..	1,064	735	..	..	793	..	..	..	..	..	..	..	..	..	..	..	..	..	..	235	..	..	..	..	660	..	..	..	..
Sukkur ..	..	993	..	1,003	585	..	..	678	..	612	..	..	..	..	..	..	..	360	398	..	..	..	..	368	..	..	..	..	..	..	..	..
Upper Sind Frontier ..	..	1,450	..	919	808	..	..	726	656	661	600	..	..	..	..	..	..	920	520	..	..	..	523	348	..	..	417	392	..	..	..	..
Average ..	..	1,341	..	1,032	711	..	..	816	392	591	319	842	1,069	..	..	..	..	784	491	..	..	..	348	375	..	..	420	594	..	..	641	..

* K = Kharif ; R = Rabi.

APPENDIX I—Weights and Measures and other Useful Tables.

TABLE RENDERING ENGLISH AVOIRDUPOIS WEIGHT INTO INDIAN (BENGAL) EQUIVALENTS.

Table—2 2-35 lbs. avoirdupois = 80 Tolas or 1 Indian Seer ; 82 2-7 lbs. avoirdupois = 40 Indian Seers or 1 Indian Maund.

English Weight.	Indian Equivalents.	English Weight.	Indian Equivalents.	English Weight.	Indian Equivalents.
Lbs.	Tolas.	Cwt.	Mds. Srs. Tolas.	Tons.	Mds. Srs. Tolas.
¼	9 13–18	5	6 32 17 7–9	26	707 31 8 8–9
½	19 4–9	6	8 55 11–3	27	735 0 0
¾	29 1–6	7	9 21 8 8–9	28	762 8 71 1–9
1	38 8–9	8	10 35 44 4–9	29	789 17 62 2–9
2	77 7–9	9	12 10 0	30	816 26 53 1–3
	Srs. Tolas.	10	13 24 35 5–9	31	843 35 44 4–9
3	1 36 2–3	11	14 38 71 1–9	32	871 4 35 5–9
4	1 75 5–9	12	16 13 26 2–3	33	898 13 26 2–3
5	2 34 4–9	13	17 27 62 2–9	34	925 22 17 6–9
6	2 73 1–3	14	19 2 17 7–9	35	952 31 8 8–9
7	3 32 2–9	15	20 16 53 1–3	36	980 0 0
8	3 71 1–9	16	21 31 8 8–9	37	1,007 8 71 1–9
9	4 30	17	23 5 44 4–9	38	1,034 17 62 2–9
10	4 68 8–9	18	24 20 0	39	1,061 26 53 1–3
11	5 27 7–9	19	25 34 35 5–9	40	1,088 35 44 4–9
12	5 66 2–3			41	1,116 4 35 5–9
	Tons.				
13	6 25 5–9	1	27 8 71 1–9	42	1,143 13 26 2–3
14	6 64 4–9	2	54 17 62 2–9	43	1,170 22 17 7–9
15	7 23 1–3	3	81 26 53 1–3	44	1,197 31 8 8–9
16	7 62 2–9	4	108 35 44 4–9	45	1,225 0 0
17	8 21 1–9	5	136 4 35 5–9	46	1,252 8 71 1–9
18	8 60	6	163 13 26 2–3	47	1,279 17 62 2–9
19	9 18 8–9	7	190 22 17 7–9	48	1,306 26 53 1–3
20	9 57 7–9	8	217 31 8 8–9	49	1,333 35 44 4–9
21	10 16 2–3	9	245 0 0	50	1,361 4 35 5–9
22	10 55 5–9	10	272 8 71 1–9	60	1,633 13 26 2–3
23	11 14 4–9	11	299 17 62 2–9	70	1,905 22 17 7–9
24	11 53 1–3	12	326 26 53 1–3	80	2,177 31 8 8–9
25	12 12 2–9	13	353 35 44 4–9	90	2,450 0 0
26	12 51 1–9	14	381 4 35 5–9	100	2,722 8 71 1–9
27	13 10	15	408 13 26 2–3	200	5,444 17 62 2–9
	Qrs.	16	435 22 17 7–9	300	8,166 26 53 1–3
1	13 48 8–9	17	462 31 8 8–9	400	10,888 35 44 4–9
2	27 17 7–9	18	490 0 0	500	13,611 4 35 5–9
	Mds. Srs. Tolas.	19	517 8 71 1–9	1,000	27,222 8 71 1–9
3	1 0 66 2–3	20	544 17 62 2–9	2,000	54,444 17 62 2–9
Cwt.		21	571 26 53 1–3	3,000	81,666 26 53 1–9
1	1 16 35 5–9	22	598 35 44 4–9	4,000	1,08,888 35 44 4–9
2	2 28 71 1–9	23	626 4 35 5–9	5,000	1,36,111 4 35 5–9
3	4 3 26 2–3	24	653 13 26 2–3	10,000	2,72,222 8 71 1–9
4	5 17 62 2–9	25	680 22 17 7–9	20,000	5,44,444 17 62 2 9

TABLE RENDERING INDIAN (BENGAL) WEIGHTS INTO ENGLISH EQUIVALENTS.

Indian Weight.	English Equivalents.	Indian Weight.	English Equivalents.	Indian Weight.	English Equivalents.
Srs. tola	Cwt. qrs. lbs.	Mds.	Tons. cwt. qrs. lbs.	Mds.	Tons. cwt. qrs. lbs.
½ or 20	0 18–35	19	13 3 23 5–9	79	2 18 0 4 4–9
1 or 40	1 1–35	20	14 2 71 1–9	80	2 18 3 2 6–7
2 or 80	1 19–35	21	15 1 62 2–9	81	2 19 2 1 1–7
Srs.		22	16 0 53 1–3	82 2-7	2 19 3 0 27 2–7
1	2 2–35	23	16 3 16 4–7	83	3 0 3 25 5–7
2	4 4–35	24	17 2 14 6–7	84	3 1 2 24
3	6 6–35	25	18 1 13 7–9	85	3 2 1 2–7
4	8 8–35	26	19 0 11 1–3	86	3 3 0 20 4–7
5	10 2–7	27	19 3 9 4–7	87	3 3 3 18 6–7
6	12 12–35	28	20 2 7 6–7	88	3 4 2 17 2
7	14 14–35	29	21 1 6 2–7	89	3 5 1 15 3–7
8	16 16–35	30	22 0 4 4–7	90	3 6 0 13 5–7
9	18 18–35	31	22 3 2 6–7	91	3 6 3 12
10	20 4–7	32	23 2 1 1–7	92	3 7 2 10 2–7
11	22 22–35	33	24 1 0 27 1–7	93	3 8 1 8 4–7
12	24 24–35	34	25 0 0 25 3–7	94	3 9 0 6 6–7
13	26 26–35	35	25 3 0 24	95	3 9 3 5 1–7
14	28 28–35	36	26 2 0 22 2–7	96	3 10 2 3 3–7
15	1 2–35	37	27 1 0 20 4–7	97	3 11 1 1 5–7
16	1 32–35	38	28 0 0 18 6–7	98	3 12 0 0
17	1 6 34–35	39	28 3 0 17 1–7	99	3 12 3 26 2–7
18	1 9 1–35	40	29 2 0 15 3–7	100	3 13 2 24 4–7
19	1 11 3–35	41	30 1 0 13 5–7	200	7 6 3 2 1–7
20	1 13 1–7	42	31 0 0 12	300	11 0 0 17 5–7
21	1 15 1–5	43	31 3 0 10 2–7	400	14 13 3 14 2–7
22	1 17 9–35	44	32 2 0 8 4–7	500	18 7 1 10 6–7
23	1 19 11–35	45	33 1 0 6 6–7	600	22 0 3 7 3–7
24	1 21 13–35	46	34 0 0 5 1–7	700	25 15 1 4
25	1 23 5–7	47	34 3 0 3 3–7	800	29 7 3 0 4–7
26	1 25 27–35	48	35 2 0 1 5–7	900	33 1 0 25 1–7
27	1 27 29–35	49	36 1 0 0	1,000	36 14 2 21 5–7
28	1 1 5–5	50	36 3 0 26 2–7	2,000	73 9 1 15 3–7
29	2 3 23–35	51	37 2 0 24 4–7	3,000	110 4 0 9 1–7
30	2 5 5–7	52	38 1 0 22 6–7	4,000	146 18 3 2 6–7
31	2 7 27–35	53	39 0 0 21 1–7	5,000	183 13 1 24 4–7
32	2 9 29–35	54	39 3 0 19 3–7	6,000	220 8 0 18 6–7
33	2 11 31–35	55	40 2 0 17 5–7	7,000	257 2 3 12
34	2 13 33–35	56	41 1 0 16	8,000	293 17 2 5 5–7
35	2 2 16	57	42 0 0 14 2–7	9,000	330 12 0 27 3–7
36	2 18 2–35	58	42 3 0 12 4–7	10,000	367 6 3 21 1–7
37	2 20 4–35	59	43 2 0 10 6–7	20,000	734 13 3 14 2–7
38	2 22 6–35	60	44 1 0 9 1–7	30,000	1,102 0 3 7 3–7
39	2 24 8–35	Mds.			
40	2 26 2–7	61	2 4 3 7 3–7	40,000	1,469 7 3 0 4–7
41	2 1 24 4–7	62	2 5 2 5 1–7	50,000	1,836 14 2 25 1–7
42	2 3 22 6–7	63	2 6 1 4	60,000	2,204 1 2 14 6–7
43	2 5 21 1–7	64	2 7 0 2 2–7	70,000	2,571 8 2 4
44	2 7 19 3–7	65	2 7 3 0 4–7	80,000	2,938 15 2 1 1–7
45	2 9 17 5–7	66	2 8 2 26 2–7	90,000	3,306 2 1 22 2–7
46	2 11 16 0	67	2 9 1 25 1–7		
47	2 13 14 2–7	68	2 9 3 23 3–7	1,00,000	3,673 9 1 15 3–7
48	2 15 12 4–7	69	2 10 2 21 5–7	2,00,000	7,346 18 3 2 6–7
49	2 17 10 6–7	70	2 11 1 20	3,00,000	11,020 8 0 18 2–7
50	2 19 9 1–7	71	2 11 3 18 2–7	4,00,000	14,693 17 2 9 1–7
51	2 1 7 3–7	72	2 12 2 16 4–7	5,00,000	18,367 6 3 21 1–7
52	2 3 5 5–7	73	2 13 1 15 6–7		
53	2 5 4	74	2 13 3 13 1–7	6,00,000	22,040 16 1 8 4–7
54	2 6 2–7	75	2 14 2 11 3–7	7,00,000	25,714 5 2 24
55	2 8 1–7	76	2 15 1 9 5–7	8,00,000	29,387 15 0 11
56	2 10 3–7	77	2 16 0 8	9,00,000	33,061 4 1 26 6–7
57	2 12 5–7	78	2 17 1 6 2–7	10,00,000	36,734 13 3 14 2–7

TABLE OF DAILY PAY OR ALLOWANCE.

From 1 Rupee to 1,000 Rupees for a Month of 28, 29, 30, or 31 Days.

Rupees per Month.	Month of 28 Days.			Month of 29 Days.			Month of 30 Days.			Month of 31 Days.		
	Rs	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a	p.
1	0	0	7	0	0	7	0	0	6	0	0	6
2	0	1	2	0	1	1	0	1	1	0	1	0
3	0	1	9	0	1	8	0	1	7	0	1	7
4	0	2	4	0	2	3	0	2	2	0	2	1
5	0	2	10	0	2	9	0	2	8	0	2	7
6	0	3	5	0	3	4	0	3	2	0	3	1
7	0	4	0	0	3	10	0	3	9	0	3	7
8	0	4	7	0	4	5	0	4	3	0	4	2
9	0	5	2	0	5	0	0	4	10	0	4	8
10	0	5	9	0	5	6	0	5	4	0	5	2
11	0	6	3	0	6	1	0	5	10	0	5	8
12	0	6	10	0	6	7	0	6	5	0	6	2
13	0	7	5	0	7	2	0	6	11	0	6	9
14	0	8	0	0	7	8	0	7	5	0	7	2
15	0	8	7	0	8	3	0	8	0	0	7	9
16	0	9	2	0	8	10	0	8	6	0	8	3
17	0	9	8	0	9	5	0	9	1	0	8	9
18	0	10	3	0	9	11	0	9	7	0	9	4
19	0	10	10	0	10	6	0	10	2	0	9	10
20	0	11	5	0	11	0	0	10	8	0	10	4
21	0	12	0	0	11	7	0	11	2	0	10	10
22	0	12	7	0	12	2	0	11	9	0	11	4
23	0	13	2	0	12	8	0	12	3	0	11	10
24	0	13	9	0	13	3	0	12	10	0	12	5
25	0	14	3	0	13	10	0	13	4	0	12	11
26	0	14	10	0	14	4	0	13	10	0	13	5
27	0	15	5	0	14	11	0	14	5	0	13	11
28	1	0	0	0	15	5	0	14	11	0	14	6
29	1	0	7	1	0	0	0	15	6	0	15	0
30	1	1	2	1	0	7	1	0	0	0	15	6
31	1	1	9	1	1	1	1	0	6	1	0	0
32	1	2	3	1	1	8	1	1	1	1	0	6
33	1	3	10	1	2	2	1	1	7	1	1	0
34	1	3	5	1	2	9	1	2	2	1	1	7
35	1	4	0	1	3	4	1	2	8	1	2	1
36	1	4	7	1	3	11	1	3	3	1	2	6
37	1	5	2	1	4	5	1	3	9	1	3	1
38	1	5	9	1	5	0	1	4	3	1	3	7
39	1	6	3	1	5	6	1	4	10	1	4	1
40	1	6	10	1	6	1	1	5	4	1	4	8
41	1	7	5	1	6	7	1	5	10	1	5	2
42	1	8	0	1	7	2	1	6	5	1	5	8
43	1	8	7	1	7	9	1	6	11	1	6	2
44	1	9	2	1	8	3	1	7	6	1	6	9
45	1	9	9	1	8	10	1	8	0	1	7	3
46	1	10	3	1	9	5	1	8	6	1	7	9
47	1	10	10	1	9	11	1	9	1	1	8	3
48	1	11	5	1	10	6	1	9	7	1	8	9
49	1	12	0	1	11	0	1	10	2	1	9	3
50	1	12	7	1	11	7	1	10	8	1	9	10
100	3	9	2	3	7	2	3	5	4	3	3	7
200	7	2	3	6	14	4	6	10	8	6	7	3
300	10	11	5	10	5	6	10	0	0	9	10	10
400	14	4	7	13	12	8	13	5	4	12	14	5
500	17	13	9	17	3	10	16	10	8	16	2	1
600	21	6	10	20	11	0	20	0	0	19	5	8
700	25	0	0	24	2	2	23	5	4	22	9	3
800	28	9	2	27	9	5	26	10	8	25	12	11
900	32	2	3	31	0	7	30	0	0	29	0	7
1,000	35	11	5	34	7	9	33	5	4	32	4	6

TABLE SHOWING ANNA ESTIMATES INTO PERCENTAGES.

(12 annas = 100)

Annas.	Percentage.	Annas.	Percentage.	Annas.	Percentage.	Annas.	Percentage.	Annas.	Percentage.	Annas.	Percentage.	Annas.	Percentage.	Annas.	Percentage.	Annas.	Percentage.	Annas.	Percentage.
0·1	1	1·3	11	2·5	21	3·7	31	4·9	41	6·1	51	7·3	61	8·5	71	9·7	81	10·9	91
0·2	2	1·4	12	2·6	22	3·8	32	5·0	42	6·2	52	7·4	62	8·6	72	9·8	82	11·0	92
0·3	3	1·5	13	2·7	23	3·9	33	5·1	43	6·3	53	7·5	63	8·7	73	9·9	83	11·1	93
0·5	4	1·7	14	2·9	24	4·1	34	5·3	44	6·5	54	7·7	64	8·9	74	10·1	84	11·3	94
0·6	5	1·8	15	3·0	25	4·2	35	5·4	45	6·6	55	7·8	65	9·0	75	10·2	85	11·4	95
0·7	6	1·9	16	3·1	26	4·3	36	5·5	46	6·7	56	7·9	66	9·1	76	10·3	86	11·5	96
0·8	7	2·0	17	3·2	27	4·4	37	5·6	47	6·8	57	8·0	67	9·2	77	10·4	87	11·6	97
0·9	8	2·1	18	3·3	28	4·5	38	5·7	48	6·9	58	8·1	68	9·3	78	10·5	88	11·7	98
1·1	9	2·3	19	3·5	29	4·7	39	5·9	49	7·1	59	8·3	69	9·5	79	10·7	89	11·9	99
1·2	10	2·4	20	3·6	30	4·8	40	6·0	50	7·2	60	8·4	70	9·6	80	10·8	90	12·0	100

TABLE FOR REDUCING ANNAS AND PIES TO DECIMALS OF A RUPEE AND *vice versa*.

annas.	0	1	2	3	4	5	6	7	8	9	10	11 pies.
0	·0000	·0052	·0104	·0156	·0208	·0260	·0312	·0365	·0417	·0469	·0521	·0573
1	0625	0677	0729	0781	0833	0885	0937	0990	1042	1094	1146	1198
2	1250	1302	1354	1406	1458	1510	1562	1615	1667	1719	1771	1823
3	1875	1927	1979	2031	2083	2135	2187	2240	2292	2344	2396	2448
4	2500	2552	2604	2656	2708	2760	2812	2865	2917	2969	3021	3073
5	3125	3177	3229	3281	3333	3385	3437	3490	3542	3594	3646	3698
6	3750	3802	3854	3906	3958	4010	4062	4115	4167	4219	4271	4323
7	4375	4427	4479	4531	4583	4635	4687	4740	4792	4844	4896	4948
8	5000	5052	5104	5156	5208	5260	5312	5365	5417	5469	5521	5573
9	5625	5677	5729	5781	5833	5885	5937	5990	6042	6094	6146	6198
10	6250	6302	6354	6406	6458	6510	6562	6615	6667	6719	6771	6823
11	6875	6927	6979	7031	7083	7135	7187	7240	7292	7344	7396	7448
12	7500	7552	7604	7656	7708	7760	7812	7865	7917	7969	8021	8073
13	8125	8177	8229	8281	8333	8385	8437	8490	8542	8594	8646	8698
14	8750	8802	8854	8906	8958	9010	9062	9115	9167	9219	9271	9323
15	9375	9427	9479	9531	9583	9635	9687	9740	9792	9844	9896	9948

In a line with the annas in the left-hand column and in the same column with the pies at the top the decimal is found corresponding to *1a.7p.* is ·4635; and, conversely for ·6406, the value is found to be 10*a.* 3*p.*

The rupee weighs 180 grains troy, or 100 tolas, and consists of 11 parts of silver and 1 of alloy. The Gold Rupee is of the same weight and standard. The Copper coins are the half-anna weighing 200 grains; the quarter-anna, or paisa 100 grains; the half-paisa, 50 grains; and the pie, 33⅓ grains.

BAZAR WEIGHT.

5	Tolas	..	..	.. = 1 Chhatak.
2	Chhataks	..	..	.. = 1 Atapawa.
2	Atapawas or 4 Chhataks	..	..	.. = 1 Pawa.
2	Pawas	..	..	.. = 1 Adaseri.
2	Adaseris or 4 pawas	..	..	.. = 1 Ser or Seer.
5	Sers	..	..	.. = 1 Panseri.
8	Panseris or 40 sers	..	..	.. = 1 Man or Maund.

The mass is exactly equal to 100 lbs. troy.
The ser weighs 80 tolas or rupees, or 36 annas in copper coins.
Also 35 sers are equal to 72 lbs. avoirdupois; and 49 mans are equal to 36 cwts.
The pound avoirdupois weighs 38$\frac{8}{9}$ tolas, and the pound troy 32 tolas.

IMPERIAL AVOIRDUPOIS WEIGHT.

27·34	Grains (gr.)	..	..	.. = 1 Drachm (dr.).
16	Drachms	..	..	.. = 1 Ounce (oz.).
16	Ounces (7,000 grains)	..	..	.. = 1 Pound (lb.).
14	Pounds	..	..	.. = 1 Stone (st.).
28	Pounds	..	..	.. = 1 Quarter (qr.).
4	Quarters	..	..	.. = 1 Hundredweight (cwt.)
20	Hundredweights	..	..	.. = 1 Ton.

IMPERIAL MEASURES OF CAPACITY.

5	Fluid ounces of water	..	..	.. = 1 Gill.
4	Gills	..	..	.. = 1 Pint (pt.).
2	Pints	..	..	.. = 1 Quart (qr.).
4	Quarts	..	..	.. = 1 Gallon (gal.).
2	Gallons	..	..	.. = 1 Peck (pk.).
4	Pecks	..	..	.. = 1 Bushel (bus.)
8	Bushels	..	..	.. = 1 Quarter (qr.).
6·25	Gallons	..	..	.. = 1 Cubic foot.
1	Gallon	..	..	.. = 0·16 Cubic foot.

A pint of pure water weighs a pound and a quarter.

IMPERIAL LINEAR MEASURE.

3	Barley corns	..	..	.. = 1 Inch (in.).
12	Inches	..	..	.. = 1 Foot (ft.).
3	Feet	..	..	.. = 1 Yard (yd.).
5½	Yards	..	..	.. = 1 Pole (po.).
40	Poles	..	..	.. = 1 Furlong (fur.).
8	Furlongs	..	..	.. = 1 Mile (m.).
3	Miles	..	..	.. = 1 League (lea.).

The chain used for measuring land is divided into 16 links, which are called annas and is 33 feet long.

1	Square chain	..	..	.. = 121 Square yards = 1 Guntha.
40	Gunthas	..	..	.. = 1 Acre.

IMPERIAL SQUARE MEASURE.

144	Sq. inches	..	..	.. = 1 Sq. foot (sq. ft.).
9	Sq. feet	..	..	.. = 1 Sq. yard (sq. yd.).
30¼	Sq. yards	..	..	.. = 1 Sq. pole (sq. po.).
40	Sq. po'es	..	..	.. = 1 Rood (ro.).
4	Roods	..	..	.. = 1 Acre (ac.).
640	Acres	..	..	.. = 1 Sq. mile (sq. m.).
6,272,640	Sq. inches	..	..	.. = 1 Acre.
43,560	Sq. feet	..	..	.. = 1 Acre.
4,840	Sq. yards	..	..	.. = 1 Acre.
160	Sq. roods	..	..	.. = 1 Acre.
10	Sq. chains	..	..	.. = 1 Acre.

IMPERIAL CUBIC MEASURE.

1,728	Cubic inches	..	..	.. = 1 Cubic foot.
27	Cubic feet	..	..	.. = 1 Cubic yard

MISCELLANEOUS.

A cusec means a discharge of water at the rate of 1 cubic foot per second—86,400 cubic feet per day. This will cover an acre of land 2 feet deep.

A cubic foot of water weighs 62½ lbs.

A gallon of water weighs 10 lbs., and contains 277·274 cubic inches.

A cubic foot of water	..	..	..	= 6¼ Gallons.
An inch of rainfall	..	..	..	= 100 Tons per acre.
1	Hat or cubit	..	..	.. = 1½ Feet.
2	Hats	..	..	.. = 1 Yard.
70	Yards square	..	..	.. = 1 Acre (roughly).

MONEY.

					Value Sterling. £	s.	d.
				1 Pie	0	0	0½
3	Pies	..	..	.. = 1 Paisa or 1 anna	0	0	0½
12	Pies	..	..	.. = 1 Anna	0	0	1
16	Annas	..	..	.. = 1 Rupee	0	1	4
15	Rupees	..	..	.. = ...	1	0	0
1,00,000	Rupees	..	..	.. = 1 Lakh	6,666	13	4
100	Lakhs	..	..	.. = 1 Crore	666,666	13	4

APPENDIX J—List of Crops grown in the Bombay Presidency, with English, Vernacular, and Scientific names.

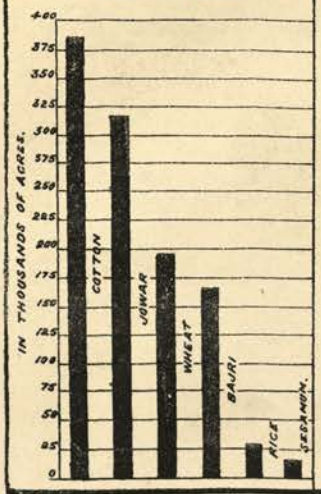
No.	English Name where possible.	Scientific Name.	Gujarati.	Marathi.	Kanarese.
		I.—Cereals.			
1	Jowari (Great Millet).	*Sorghum vulgare. Sorghum saccharatum*, etc.	Juwar	Jwari, Shalu.	Jondhala, Jola, Kenjol, Bilejol, Yenagara.
2	Bajri (Spiked Millet).	Pennisetum Typhoideum	Bajri, Bajro	Bajri, Sajgure	Sajje.
3	Rice or Paddy	Oryza sativa	Dangar, Bhat	Bhat, Sal	Bhatta, Nellu.
4	Wheat	Triticum æstivum or Triticum vulgare.	Ghau, Popatia	Gahu, Khapli	Godhi, Khapligodhi.
5	Spelt or covered grained wheat.	Triticum spelta	....	Khapli, Jod	Khapligodhi.
6	Barley	Hordeum vulgare	Jav	Satu, Jav	Javegodhi.
7	Maize	Zea mays	Makkai	Maka	Gorinjola.
8	Kodra	Paspalum scrobiculatum	Kodra	Kodra, Harik	Harik.
9	Ragi	Eleusine corocano	Bavto, Nagli	Nagli, Nachni	Ragi.
10	Italian Millet	Setaria Italica, Panicum Italicum.	Kang	Kangu, Kang.	Rale, Navni.
11	Varai, Sava and Barag	Panicum miliaceum, Panicum miliare.	Vari, Sava, Samli	Vari, Sava, Barag	Save, Baragu.
12	Banti	Panicum crusgalli var: frumentaceum.	Banti	Barti	....
13	Bhadli	Panicum pilosum, Setaria glauca.	Bhadli	Bhadli	....
		II.—Pulses.			
1	Pigeon Pea	Cajanus Indicus	Tuver	Turi	Togari.
2	Gram	Cicer arietinum	Chana	Harbhara, Chane	Kadle.
3	Green Gram	Phaseolus mungo	Mag	Mug	Hesaru.
4	Black Gram	Phaseolus radiatus	Adad	Udid	Uddu.
5	Small-fruited-Dolichos.	Dolichos catiang	Chola	Chavli	Alasndi.
6	Horse Gram	Dolichos uniflorus	Kulthi	Kulith, Kulthi, Hulge.	Hurli.
7	Field Pea	Pisum sativum	Vatana	Vatana	Batgadle.
8	Lentil	Ervum lens	Masur	Masur	Channangi.
9	Chickling Vetch	Lathyrus sativus	Lang	Lakh	....
		III.—Orchard and Garden Produce.			
		A.—Vegetable (Roots and Tubers).			
1	Potato	Solanum tuberosum	Batata	Batate	Batate, Alugadde.
2	Sweet Potato	Ipomea batatas	Sakaria	Rstale	Genasu.
3	Yam	Dioscorea sativa	Ratalu	Goradu	Mudigenasu.
4	Elephant Foot	Amorphophallus campanulatus.	Suran	Suran	Suran-Gadde.
5	Carrot	Daucus carota	Gajar	Gajar	Gajjare.
6	Radish	Raphanus sativus	Mula	Mula	Mulangi.
7	Beet-root	Beta vulgaris	Palak	....	....
		B.—Green Vegetables.			
1	Cabbage	Brassica oleracea	Kobij	Kobi	Kyabig.
2	Brinjal or Egg-plant	Solanum melongena	Vengni	Vangi	Badnekai.
3	Tomato	Lycopersicum esculentum	Tomata	Belvangi	Chapperbadnekai.
4	Fenugreek	Trigonella foenumgracum	Methini bhaji	Methi	Mente-palla.
5	Edible Hibiscus	Hibiscus esculentus	Bhinda	Bhendi	Bendekai.
6	Musk Melon	Cucumis melo	Khadbuch	Kharbuj	Kharbuj.
7	Water-melon	Cucurbita citrullus	Tarbuch	Kalingade	Kalangade-hannu.
8	Large fruited-Dolichos.	Dolichos lablab	Val	Val, Pavte	Avre.
9	Kidney bean	Phaseolus aconitifolius	Math	Math, Matki	Madke.
10	Nolkol	Bassica oleracea	....	Nawalkol	Nawalkol.
11	Bengal amaranth	Amarantus gangeticus	....	Math	Kiraksoli.
12	Amaranth	Amarantus Blitum	Tandalja	Dant, Tandulja	Duntupalla.
13	Amaranth	Amarantus polygamus	Chaulai	Chavali	Gorijpalle.
14	Goosefoot	Chenopodium album	....	Chakvat	Chakke.
15	Spinach	Spinacia oleracea	Palak	Palak	Palakan-palle.
16	Sword-bean	Canavalia ensiformis	Ahva	Ghevda	Shenbekai.
17	Sweet melon	Cucumis melo	....	Chibdi	....
18	Smaller field-cucumber.	Cucumis melo	Kakadi	Kakadi	Savatekai.
19	Cucumber	Cucumis sativus	Tar kakadi	Tar kakadi	....
20	Bottle gourd	Lagenaria vulgaris	Dudhi	Dudha bhopla	Halu-kumbala.
21	White gourd-melon	Benincosa cerifera	Bhurakola	Bhura Kohla	Sandagi kumballkai.
22	Towel-gourd	Luffa acutangula	Turia	Dodka, Ghosali	Heralkai, Kirekai.
23	Towel-gourd	Momordica Charantia	Karelan	Karli	Hagalkai.
24	Small red gourd	Cephalandra Indica	Giloda	Tondle	Tondekai.
25	Large red gourd	Cuburbita maxima	Kohlu	Tambda bhopla	Kumbala.
26	Squash	Cucurbita moschata	....	Kashi bhopla	....
		C.—Green Fodder for Cattle.			
1	Lucerne	Medicago sativa	Vilayati Ghas	Vilayati gavat	Vilayati hullu.
2	Hot-weather jowari	Sorghum	Sundia	Kadval	Nirjol.
3	Guinea Grass	Panicum maximum	Gini Ghas	Gini gavat	Gini hullu.
4	Oats	Avena sativa	....	....	Take godhi.
5	Field Vetch	Cyamopsis psoralicides	Guvar	Gavar	....
		D.—Fruit Trees.			
1	Plantain	Musa sapientum, Musa paradisiaca.	Kel	Kele	Bale.
2	Mango	Mangifera indica	Ambo	Amba	Mavu.
3	Lime	Citrus bergamia	Limboi	Limbu	Nimbe.
4	Sweet Lime	Citrus limetta	Mithi limboi	Sakhar limbu	Sakrinimbe.
5	Orange	Citrus aurantium	Narangi	Naringe	Kittale.
6	Citron	Citrus Medica	Bijoru	Mhalung	Madal.
7	Pomelo or Shaddock	Citrus decumana	Papanas	Papanas	Sakreganche.
8	Pomegranate	Punica granatum	Dadarodi	Dalimb	Dalimb.
9	Guava	Padium pomiferum	Jamrukhi	Peru	Perla.
10	Custard Apple	Annona squamosa	Sitafali	Sitafal	Sitafal.
11	Pine Apple	Ananas sativa	Ananas	Ananas	Ananasu.
12	Fig	Ficus carica	Anjir	Anjir	Anjura.

No.	English Name where possible.	Scientific Name.	Gujarati.	Marathi.	Kanarese.
		D.—Fruit Trees—*contd.*			
13	Jack Fruit	Artocarpus integrifolius	Phanas	Phanas	Halasu.
14	Papay	Carica papaya	Papaia	Papai	Papayi.
15	Cashewnut	Anacardium occidentale	Kaju	Kaju	Geru bija.
16	Bullock-heart	Annona reticulata	Ramfali	Ramfal	Ramfal.
17	Cocoanut	Cocos nucifera	Nalieri	Naral	Tengu.
18	Grapes	Vitis vinifera	Darakh	Drakh	Drakh.
19	Wood-apple	Feronia Elephantum	Kothi	Kavatha	Belval.
20	Bor	Zizyphus Jujuba	Bordi	Bor	Bore.
21	Jambhul	Eugenia Jambolana	Jambu	Jambul	Niral.
22	Sapodilla	Achras Sepota	....	Chiku	Kampole.
23	Mowrah	Bassia latifolia	Mahuda	Mowra	Ippi.
24	Rayan or Kirni	Mimusops hexandra	Rayan	Rayani	....
25	Sebesten	Cordia Myxa	Gunda	Bhokar	Chella.
26	Gumberry	Cordia Rothii	....	Gondni	....
27	Emblic Myrobalan	Phyllanthus Emblica	Amla	Avala	Nellikai.
28	Cicca	Phyllanthus distichus	....	Harpar Revdi	....
29	Mulberry	Morus indica	....	Tut	Hilu.
		IV.—Drugs and Narcotics.			
1	Tobacco	Nicotiana tabacum	Tamakhu	Tambakhu	Tambaku.
2	Indian Hemp	Cannabis sativa	Bhang, Ganja	Bhang, Ganja	Bhangi, Gange.
3	Opium	Papaver somniferum	Afin	Afu	Afimu.
4	Coffee	Coffea Arabica	Kafi, Bund	Kafi, Bund	Kafi, Bundu.
5	Tea	Thea sinensis, Camelia thefera.	Chaha	Chaha	Chaha.
6	Chinchona	Chinchona officinalis	Chinchona	Chinchona	Chinchona.
7	Betel leaves	Piper betel	Pan	Vidyachi pane	Villyadele.
8	Betel-nut	Areca catechu	Sopari	Supari	Adike.
		V.—Condiments and Spices.			
1	Cardamom	Elettaria cardamomum	Elchi	Veldode	Yelakki.
2	Chillis	Capsicum frutescens	Marcha	Mirchya	Mensinkai.
3	Ginger	Zingiber officinale	Adu	Ale	Khar-genasu.
4	Black Pepper	Piper nigrum	Mari	Miri	Menasse.
5	Turmeric	Curcuma longa	Halad	Halad	Arshina.
6	Fennel or Anise seed	Pimpinella anisum	Variali	Badi-shep	Sabbasige.
7	Coriander	Coriandrum sativum	Dhana	Dhane	Havija.
8	Cumin	Cuminium cyminum	Jiru	Jire	Jinge.
9	Ajwan seed	Psychotus ajowan, carum copticum.	Ajmo	Ova	Ajwan.
10	Fenugreek	Trigonella foenumgraecum.	Methi	Methi	Mente.
11	Garlic	Allium sativum	Lasan	Lasun	Belloli.
12	Onions	Allium cepa	Kanda, Dungli	Kanda	Ullegadde.
13	Tamarind	Tamarindus Indica	Amli	Chinch	Hunashannu.
14	Mate mangosteen	Garcinia indica	Kokam	Kokamb, Ratambe	Ambsol.
15	Nutmeg	Myristica laurifolia	Jayaphal	Jayaphal	Jaikai.
16	....	Carum nigrum	Shah Jiru	Shahjire	Shahjiraji.
17	Mint	Mentha sativa	Pudino	Pudina	Maraga.
18	Long pepper	Piper longum	Pipar	Pimpali	Hippali.
		VI.—Starches.			
1	Arrowroot	Maranta arundinacea, curcuma angustifolia	Ararut	Ararut (Tavkil)	Ararut, Kuvehittu.
		VII.—Oilseeds.			
1	Sesame or Jingelly-seed.	Sesamum Indicum	Tal	Til	Yellu.
2	Linseed	Linum usitatissimum	Alsi	Javse, Alsi	Agashe.
3	Castor oil-seed	Ricinus communis	Diveli erande	Erandya	Haralu.
4	Rapeseed	Brassica napus	Sarsav	Shiras	....
5	Nigerseed	Verbasina sativa, Abyssinica.	Gujzotia	Kharsani, Ramtal	Khurasni, Karla, Gurellu.
6	Groundnut seed	Arachis hypogea	Bhoising, Magphali.	Bhuimug	Nelgadle.
7	Dillseed	Anethum sowa, Peucedanum graveolens.	Sua	Balant-shep	Banant Sepu.
8	Common mustard	Sinapis Indica	Rai	Mohri	Sasvi.
9	Tarmira	Eruca sativa	....	Jambho	....
		VIII.—Sugars.			
1	Sugarcane	Saccharum officinarum	Sherdi	Us	Khabbu.
2	Palmyra Palm	Borassus flabelliformis	Tad	Tad	Tali mara.
3	Date Palm	Phoenix sylvestris	Khajuri	Khajuri	Shindi Ichal.
		IX.—Dyes.			
1	Indigo	Indigofera tinctoria	Gali	Nil, Guli	Nili.
2	Safflower	Carthamus tinctorius	Kasumbi	Kusumba	Kusubi.
3	Morinda	Morinda citrifolia	Al, Sorangi	Al, Surangi	Siran jikadi.
		X.—Fibres.			
1	Cotton	Gossypium herbaceum	Kapas	Kapas	Hatti
2	Bombay Hemp	Crotolaria juncea	San	Tag, San	Sanbu.
3	Hemp	Hibiscus canuabinus	Sheria	Ambadi	Pundi.
4	Jute	Corchorus sp.	Jut	Jut	Goni naru.
5	Rhea	Boemeria nives	Rhia	Rhia	Rhia.
		XI.—Miscellaneous.			
1	Amaranth	Amaranthus frumentaceus.	Rajgaru	Rajgira	Rajgiri.
2	Cress	Lepidium sativum	Asalio	Haliv	....
3	Bel	Ægle Marmelos	Billi	Bel	Belpatri.
4	Swallow-wort	Calotropis procera	....	Rui	Yakki.
		XIa.			
1	Grass	(Various)	Ghas	Gavat	Hullu.

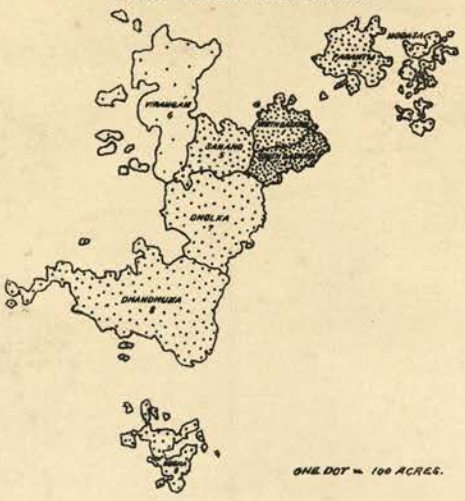
AHMEDABAD DISTRICT

AHMEDABAD DISTRICT.

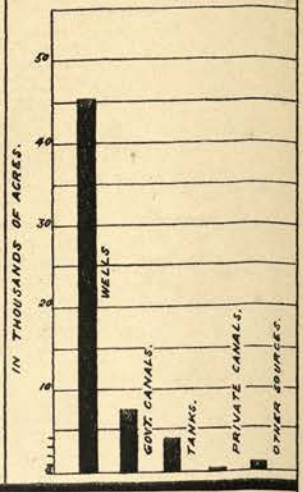
RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER IRRIGATION.



RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



AREA UNDER CROPS.

COTTON. ONE DOT = 1000 ACRES.

JOWAR. ONE DOT = 1000 ACRES.

BAJRI. ONE DOT = 1000 ACRES.

WHEAT. ONE DOT = 100 ACRES.

CASTOR-SEED. ONE DOT = 100 ACRES.

SESAMUM. ONE DOT = 100 ACRES.

RAINFALL.

KHARIF-SEASON ONE DOT = 20 CENTS.

RABI-SEASON ONE DOT = 20 CENTS.

HOT-WEATHER ONE DOT = 20 CENTS.

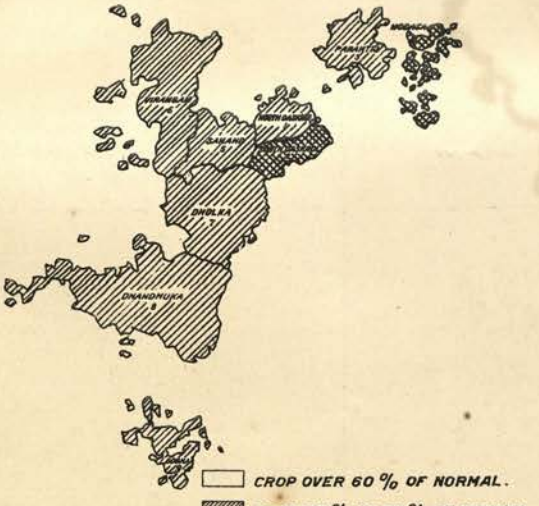
AHMEDABAD DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

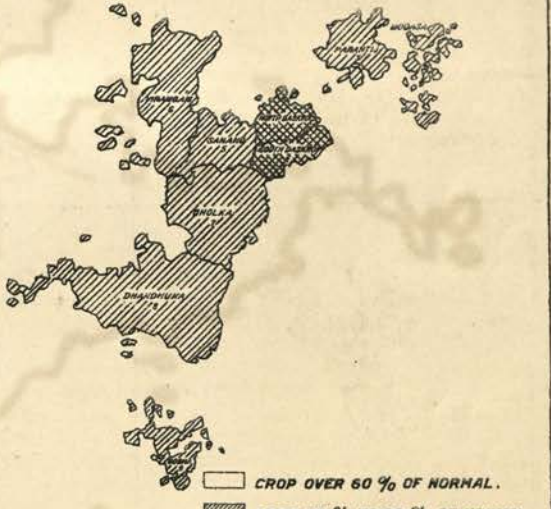
GENERAL LIABILITY TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.

INTENSITY OF FAMINE IN 1918-19.



INTENSITY OF FAMINE IN 1920-21.



NUMBER OF CATTLE.

1909-10

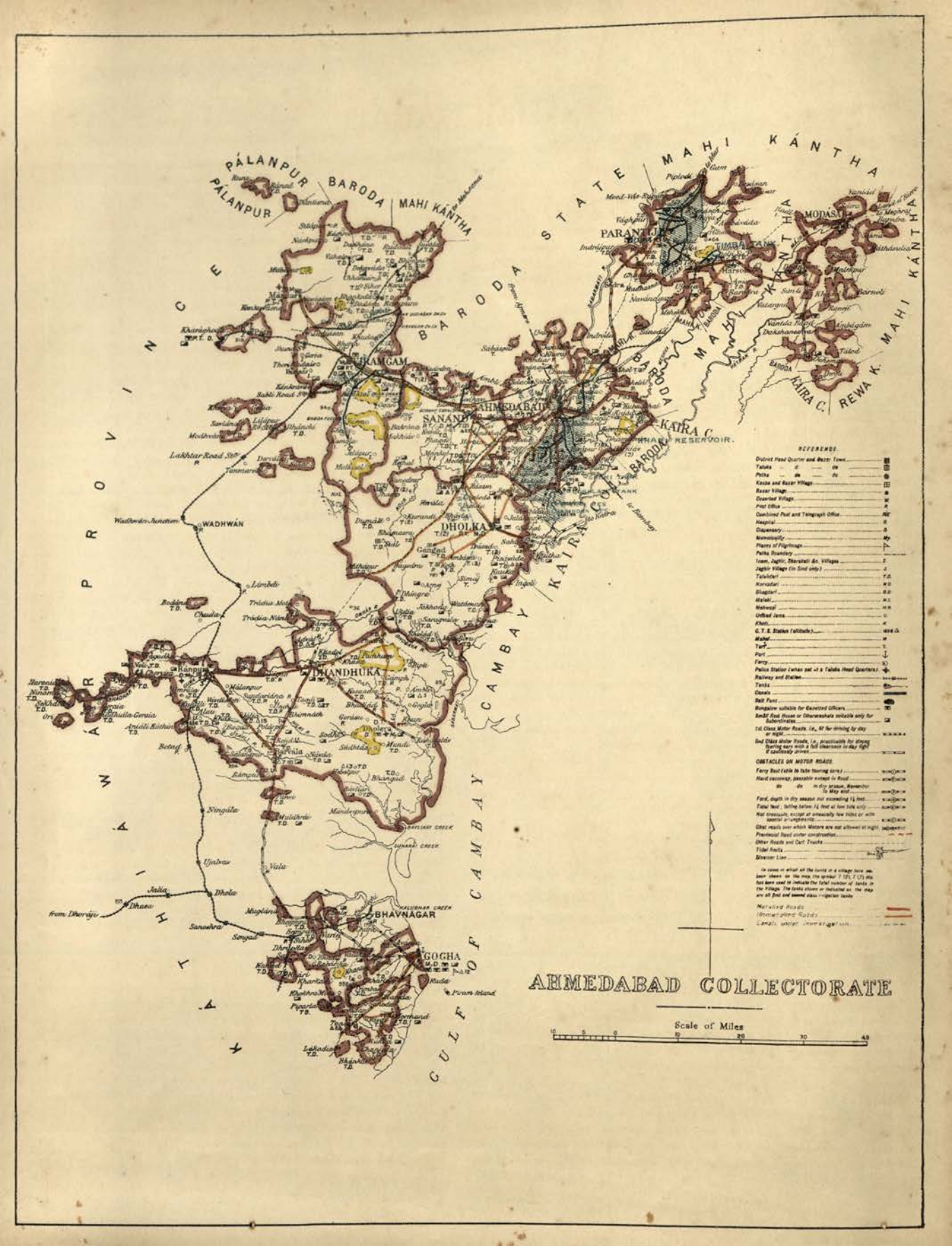
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE

1919-20

ONE DOT = 1000 CATTLE


PÁLANPUR
BARODA
MAHI KÁNTHA
PROVINCE
BARODA STATE
MAHI KÁNTHA
PARANTIJ
MODASA
VIRAMGAM
AHMEDABAD
SANAND
KAIRA C.
REWA K.
DHOLKA
WADHWAN
DHANDHUKA
BHAVNAGAR
GOGHA
KATHIAWAR
GULF OF CAMBAY
CAMBAY
KAIRA
REFERENCE
ARMEDABAD COLLECTORATE
Scale of Miles

AHMEDABAD

POSITION AND AREA

The district of Ahmedabad lies between 21° 26′ and 23° 37′ north latitude and 71° 19′ and 73° 27′ east longitude and covers an area of 3,816 square miles. It is bounded on the west and south by the peninsula of Kathiawar; on the north by the northern division of Baroda Territory; on the north-east by Mahi Kantha Territory; on the east by the state of Balasinor and the district of Kaira; and on the south-east by the State and Gulf of Cambay. The boundary line is irregular, and two portions, the Parantij taluka in the north-east, and the Gogha peta in the south, are cut off from the main body of the district by the territories of Native States. The compactness of the district is also broken by several villages belonging to Baroda and Kathiawar which lie within it, while several of its own are scattered in small groups beyond its borders. This scattered condition of the district and its proximity to foreign territory increase the burden of famine administration.

GENERAL APPEARANCE

The general appearance of the district shows that at no very remote period it was covered by the sea. The tract between the head of the Gulf of Cambay and the Rann of Cutch is still subject to overflow at high tides. In the extreme south and also just beyond the northern boundary, are a few rocky hills. But between these points the whole of the district forms a level plain, gradually rising towards the north and east, its surface unbroken by any inequality greater than a sand hill. In the extreme west the country is subject to inundation and there are extensive salt wastes stretching to the Rann.

The chief physical feature is the river Sabarmati, which rises in the north-east, near the extremity of the Aravalli range, and flows towards the south-west, falling finally into the Gulf of Cambay. The river has three tributaries, the Khari, Meshwa and Majham, which, with the Shelva and Andhari, all flow south-west. Flowing east from Kathiawar are the Bhogava, Bhadar, Utavli, Nilki, Pinjaria, and Adhia rivers. There are several creeks of which the most important are those of Dholera and Gogha. The Nal in the south-west is a shallow lagoon of about fifty square miles.

PHYSICAL FEATURES

Gogha and its villages are really in Kathiawar, and Parantij and Modasa belong to the Mehvasi country of the Mahi Kantha. The rest of the district can be divided into seven tracts, each marked by some peculiarity of soil and even by differences in the inhabitants. These seven divisions are :—

1. Daskroi, more properly Dashkroi, that is, the land included within a radius of ten *Kos* or Kros from the head-quarters town.
2. Sabar Kantha, the country on the lower course of the Sabarmati; its boundary is a line drawn through the villages of Saroda, Changodar, Kavitha, Rasam, Dholka and Vautha.
3. The Bhal or black soil tract, comprising the southern half of the Dholka and the eastern half of the Dhanduka talukas.
4. The Nal Kantha extending from the banks of the Nal to within a few miles of the town of Sanand.
5. The Kankra extending from that point northwards into the Baroda Territory.
6. The Chuval (chuvalis, *i.e.* forty villages) lying north of the Nal Kantha and divided from it by a line running east and west through the town of Viramgam.
7. The Kanear, a narrow tract of reddish soil, west of the Bhal, between the towns of Dhanduka and Barvala. The rest of Dhanduka in the west is colloquially classed as part of Kathiawar.

RAINFALL

The average rainfall of the district is about twenty-nine inches. It is heaviest in the hilly country of Modasa, and in Parantij, where the rainfall is at times considerable. The rainy season generally begins in the latter part of June, and after fairly heavy rains in July, gradually closes about the end of September.

CLIMATE

In the cold season (November to February) the range of temperature is very great. From March until the rains begin, the wind, turning to the west, is heated in the day time. October is the least healthy month, the climate being close and feverish. Generally speaking, the climate of the central portion of the district is more oppressive during the hot season, and at all times less healthy, than along the coast line or in the north, the coast benefiting by its nearness to the sea, and the north of the district by its height above the sea level.

SOIL

The two chief kinds of soil are the black or *kali*, and the light or *goradu*. In many parts of the district both kinds occur within the limits of the same village but on the whole the black soil is found towards the west and light soil in the east. Two other varieties require notice, an alluvial deposit of the Sabarmati river, the most fertile soil of the district, and easily irrigated, holding water at the depth of a few feet below the surface and a red stony soil like that of the Deccan, in the north-east of Parantij.

CROPS

Cotton is the most important crop occupying on the average more than one-fourth of the whole tillage area. It is grown chiefly in the Dholka, Dhanduka and Viramgam talukas. *Besar* or mixed soil is the best for cotton cultivation; next comes *kali*, while *goradu* is least suitable. *Jowar* is the staple grain of the district; it is often grown with pulses. The straw is a highly valued fodder. *Bajri* comes next in importance as a food grain and is also sown with pulses. Wheat, like cotton, is chiefly grown in Dholka, Dhanduka and Viramgam. The low, *bara* lands of Dholka and Dhanduka are, even where the soil is deep, too moist for cotton, but raise wheat of a very good quality. In Dhanduka the variety is hard red as the salt subsoil is said to be unfavourable to the white. Elsewhere both red and white are found. Rice is grown mainly in Parantij, Daskroi, Sanand and Dholka talukas. The Sanand and Dholka rice beds are, owing to bad water storage, inferior to those of Daskroi. Sesamum is the principal oil-seed and like wheat is largely exported. In Daskroi, Dholka and Parantij many *maliat* or garden crops are grown.

Normally, cotton occupies about three and a half lakhs of acres. *Jowar* covers from two and a half to three lakhs of acres while *bajri* is grown to the extent of one and half lakhs of acres. The area under rice is comparatively small, only about thirty thousand acres. Wheat has an area of about two lakhs of acres. Maize is confined to the Modasa mahal and occupies about five thousand acres. Tobacco, which is a crop of some importance in Sanand, Daskroi and Dholka talukas, occupies about three thousand acres. Under oil-seeds sesame and castor are the most important occupying about fifteen and ten thousand acres respectively. Groundnut which is exclusively cultivated in the Parantij taluka covers five thousand acres.

CATTLE

The district is very important and interesting in connection with cattle. So far as this Presidency is concerned, it, along with Kaira, produces the best Kankreji cattle that we have, and Ahmedabad itself is the centre of a considerable dairying activity which extends along the Railway line as far as Baroda. In the grazing tracts the Rabaris or professional breeders, pursue their business with considerable skill and knowledge. Many cultivators also who have *kadbi* and pulse *bhusa* to spare, practise rearing in which they are very successful. The best Kankreji breeding takes place in the Viramgam and Sanand talukas and part of Daskroi. Throughout the greater part of the district the breed is essentially of the Kankreji type, and the ordinary village cattle are distinctly above the general run of other parts; but in some localities other types are prevalent. Thus in the north of the Modasa mahal, a small and hardy hill breed known as 'Dongari desi' is to be found, while to the south and west of Dhanduka the Gir type is common. In many parts of the district cattle dealing is much in evidence and many types from Kathiawar and Rajputana can be seen, including the Nagori, Sindhi, Malwi, Gir and other less clearly defined breeds. Indeed, a single locality will often both import and export, selling of the best of its own young stock to the rearers of the Charotar and buying for its own use a cheaper class of imported cattle. On the whole, this tract makes good use of its grazing facilities though in some parts such as the Modasa and Gogha mahals there is still room for improvement.

FOREST

The district, as a whole, is open and poorly wooded. The chief trees are mango, *rayan* (*Mimusops hexandra*), *mahua*, and *nim* (*Melia Azadirachta*). The Modasa hills bear inferior teak and bamboo and also produce the *khair* (*Acacia Catechu*), *babul*, *pipal* (*Ficus religiosa*), *bordi* (*Ziziphus Jujuba*) and *khakra* (*Butea frondosa*). Many of the trees and shrubs supply food, medicines and

materials for dyeing and tanning. Gum from the *khair* and *babul* is eaten by the poorer classes. The berries of the *mahua* are boiled with grain and the leaves of a creeper called *dori* (*Leptadenia reticulata*) form a favourite article of food with the *Bhils*.

IRRIGATION

As the rivers flow in deep channels, there is not much direct river irrigation, but well irrigation is practised to a large extent. The only large irrigation works are the Hathmati and Khari Cut canals which are a combined system consisting of a small canal with a discharging capacity of three hundred and fifty cubic feet per second. Its head works are situated in Idar State about fifty-five miles from Ahmedabad on the Ahmedabad-Parantij line and comprise a weir of rubble masonry about a thousand feet in length and with a maximum height of twenty-two feet. The canal irrigates a tract of land lying between the Sabarmati and Khari rivers. The surplus water is passed into a reservoir known as the Bokh Reservoir, which has no direct irrigation, but serves as a storage work for the Khari, into which it discharges. A part of the flow of the Khari with any excess water from the Hathmati canal is abstracted for direct irrigation at the Khari sluices and the other part diverted through an artificial cut, the Khari Cut, consisting of a weir across the Khari river two hundred feet in length and three feet in height, into a natural channel running down the centre of the Sabarmati—Khari plain, which in its turn supplies a system of distributaries, several small tanks and the large Chandola Tank near Ahmedabad. The system has cost over thirteen lakhs of rupees and irrigates about fourteen thousand acres. The supply is rather uncertain.

Tanks in the district are often utilised by the agriculturists in the neighbourhood, when there is a scanty rain in latter part of the monsoon. Well irrigation is practised generally in tracts (Daskroi and Dholka) where garden crops are reared but it is also freely practised where there is a shortage of rainfall. The tables exhibit the number of wells and tanks used for irrigation and for other purposes, in the district.

DRINKING WATER

Scarcity of drinking water is often severely felt in years of scanty rainfall, when even wells with a perennial supply have been found to run dry and good many tanks remaining empty. Digging of temporary wells, clearing and deepening of existing wells and removing silt from tanks is encouraged by giving grants both from Government and Local Boards but still in drought the question of good drinking water is one of great moment, especially in the Bhal country and in Viramgam.

INDUSTRIES

Ahmedabad is the second weaving centre in the Presidency and a considerable portion of the population is engaged in textile industry. There are forty-three spinning and weaving mills, twelve weaving mills, one woollen mill, one silk factory, two carpet making factories, seven spinning mills, four oil mills, one hosiery mill, one type foundry and two match factories in the district, besides a number of gins and presses.

TRADE

There is also a trade in dyeing and calico printing and Ahmedabad is specially noted for silk cloth and *kinkhab*. The town of Dholka is also an important weaving centre.

The imports of the district comprise sugar, piece-goods, timber, metal, grain, cocoanuts and molasses ; the exports are cotton, oilseeds and grain.

COMMUNICATIONS

From a famine point of view the railway facilities are good. The railway from Bombay to Rajputana runs through the district. Another line runs from Ahmedabad to Viramgam, where a metre-gauge branch turns south to Wadhwan and Bhavnagar, while another branch runs to the Salt Works at Kharaghoda. A metre-gauge branch railway opened in 1891 runs from Viramgam to Mehsana, where it joins the line from Ahmedabad. It connects the Kathiawar railways with the Rajputana-Malwa Railway system. The railway to Parantij which continues to Idar-Ahmednagar, was opened in 1896. The Ahmedabad-Dholka metre-gauge was opened in 1903 and is of considerable importance from a famine point of view. The line has been further extended as far as Koth and it is being extended to Dhanduka which has been joined on the other side at Botad, with the Bhavnagar Railway. When there is famine in Dhanduka the taluka will cease to suffer from the inevitable congestion in traffic on the Wadhwan main line. Thus the head-quarter town (Ahmedabad) is connected with all the taluka towns (excepting Gogha and Modasa) by the railway system.

A made road runs from Ahmedabad south towards Dholka for twenty-three miles and another road connects Ahmedabad to Bareja with the road known as the Naika-Bareja road which gives access to the Kaira district and Cambay. In the north Modasa, Harsol and Kapadvanj (Kaira) are connected by metalled roads. The Sabarmati is bridged at Ahmedabad. In the west a metalled road from Ahmedabad to Bawla joins the Sanand road at Sarkhej. A *kacha* road from Sanand is extended to Viramgam, and there is a similar road from Bawla to Dhanduka. The metalled road from Ahmedabad to Kuha (towards Kapadvanj) is under construction. The railways and roads afford excellent facilities to the people who are drawn from the rural areas to Ahmedabad city to obtain labour in textile and other industries. In years of extreme drought, however, the concentration of large numbers of labourers at one place would be a matter of great difficulty in the Bhal country and Viramgam owing to the lack of sufficient drinking water.

The population of the district, 890,911, consists of 784,666 Hindus, 99,295 Musalmans, 5,056 Christians, 1,670 Parsis and 224 persons of various other denominations.

LANGUAGES

The vernacular is Gujarati which is spoken by 91·3 per cent. of the population. Hindi or Hindustani is spoken by 5·7 per cent. and Rajastani or Marwadi by 2·0 per cent. Among Hindustani speakers, Musalmans form the majority, but there are whole Musalman communities mostly of Hindu origin, like Bohoras, Khojas, Ghanchis, Bhavsars and others whose mother tongue is Gujarati.

BROAD OCCUPATIONS

Speaking broadly 370,045 persons or 41·5 per cent. of the population are supported by Agriculture. Industry (including mines) supports 222,476 persons or 25·0 per cent., Commerce 99,282 persons or 11·3 per cent., Professions and the Liberal Arts 25,836 persons or 2·9 per cent., while the remainder 173,272 persons or 19·4 per cent. have to follow various occupations for their livelihood.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district mainly according to occupations but in a few cases according to castes. The figures are based on the census of 1921 and represent both workers and their dependents.

Pasture and Agriculture.—Of the total population of 402,069 supported by pasture and agriculture, ordinary cultivators number 222,894. Farm servants and field-labourers with a total strength of 112,977 come next. There are 32,480 persons dependent on income from rent of agricultural land. Among the persons engaged in the raising of farm stock, cattle and buffalo breeders and keepers amount to 12,676, while herds-men, shepherds and goat-herds number 13,574. Sheep, goat and pig breeders 4,861 are the others of the class, which deserve a mention. The economic condition of the classes engaged in pasture and agriculture is detailed later on under that head.

Industry.—Under this class the textile industry, composed of weavers and other workers in cotton, wool and silk at home and in factories, heads the list. It supports 118,064 persons. The wood industry is chiefly made up of carpenters, joiners, etc., 11,282, and basket-makers, workers in bamboos, etc., 1,955. In the metal industry iron workers 6,675 and workers in brass, copper, etc., 1,197, are the most important. Potters number 9,326, brick-layers 8,966, brick and tile-makers 2,490. In the food industry rice pounders and flour-grinders 3,249, manufacturers of vegetable oils 2,880, butchers 1,010 and sweetmeat-makers 553 are worth a mention. Of persons following miscellaneous industries may be noted the barbers 8,393, tailors 7,656, shoe-makers 4,314 and washer-men 2,720. Generally speaking, the condition of the classes engaged in industry is fair, as they get enough work on reasonable wages.

Trade.—The trade in food stuffs (excluding hotels) is the most important. It supports 39,954 persons among which are grain and pulse dealers 17,520, grocers and sellers of oil, salt, condiments and spices, etc. 14,429, sellers of milk, butter, fish, poultry 3,256 and dealers in hay, grass and fodder 1,434. The trade in piece-goods affords the means of livelihood to 11,958 persons. Mention may also be made here of a petty trade, *viz.*, the trade in fuel such as firewood, cowdung cakes, etc., supporting 2,625 persons. Traders as a class are secure from famine.

Professional Beggars (11,446).—The condition of some of them is not altogether satisfactory but owing to their migratory habits only a few of them are likely to require relief.

Depressed Classes.—These include the Mahars and Dheds 48,655, Chambhars 20,970 and Bhangis 14,480. The Mahars are sweepers in municipal towns and are also village servants. Chambhars work in leather. The Bhangis are scavengers in municipal towns. The condition of these classes, though not very satisfactory, is not such as to necessitate any special relief measures for them.

Brahmans (45,774).—They are mostly writers, Government servants, priests, money-lenders, etc., and are quite secure.

Musalmans (99,295).—They are weavers, dyers, calico-printers, cloth-dealers, cotton cleaners, oil-pressers, traders, etc., and are fairly well off.

Christians (5,056) and *Parsis* (1,670) are well-to-do generally.

ECONOMIC CONDITION

Ahmedabad, if the city is excluded, is essentially an agricultural district and the bulk of the people maintain themselves either by tilling the soil or from the proceeds of agriculture. More than half the land is held by large proprietors and Mehwasi chiefs. In the talukdari villages the condition of the cultivators is inferior to that of Rayatwari peasants. The talukdars, living in idleness on their rents, have no enterprize, their economic condition is bad and their estates mostly in debt.

Broadly, the cultivating classes may be divided into Kanbis and Kolis with an admixture of Girasias and Rajputs, especially in Dhanduka and Gogha. The Kanbis hold the first place as husbandmen. The Kanbis of the Patidar caste inhabiting the fine villages of the central tract, especially Daskroi, are particularly good agriculturists. The agriculturists had lost a good proportion of their cattle and had parted with many of their ornaments and moveables in the great famine of 1899-1900 but the high prices of cotton during the past five or six years have generally improved their condition. The Kolis form a large proportion of the population and are most numerous in Prantij, Modasa and Viramgam. They are mostly cultivators or agricultural labourers employed by *Patidars* and the better class of cultivators. Owing to their improvident habits the Kolis are likely to require help in famine times. The Talbada Kolis are superior to the Chuvalia Kolis. Lowest of all are the Mewasi Kolis and Bhils, unsettled tribes, who grow coarse crops in cleared forest patches.

The classes that will demand the first attention in famine are the Kolis, particularly the Chuvalia Kolis of Viramgam, Vaghris, Dheds and other depressed classes.

As already noted under " industries " Ahmedabad holds a high place as a manufacturing district. The large number of mills and other factories in the district absorbs a considerable amount of labour. The outturn of cotton in good years gives ample work to the gins and presses in the district.

The monied classes of towns invest their savings and capital in mills in preference to lands or railways. Outside the towns money is invested in land by the local *banias* and by the money lending classes generally.

Migration.—In a year of scarcity the affected people of Gogha migrate by sea to Broach and Surat in search of labour. A few also migrate to the Panch Mahals if conditions are better there, and to Rajputana and Bombay. On the other hand, there is a large influx of labourers from Kathiawar and Marwar in famine years.

During the four years 1895-96 to 1898-99 which preceded the great famine of 1900 the average gross cropped area was 1,173,000 acres. The great famine effected a decrease in the area cropped in the following years and in 1903-04 the area decreased by about a lakh of acres. The bad character of seasons in some of the following years brought about a gradual decline so that the area cropped in 1918-19 was reduced to eight and a half lakhs of acres, *i.e.*, twenty-two per cent. below the area before the great famine, but the high rates of grains and cotton in the prosperous years of the war improved the condition of the agriculturists who again increased the cropped area which in 1922-23 very nearly approached twelve lakhs of acres.

The effects of the famine years were also seen in the great decrease of agricultural stock since 1886. The result was that the cattle in 1901-02 had decreased by more than one-half from 408,000 to 198,000 ; horses and ponies from 6,300 to 2,700, sheep from 33,000 to 26,300 while milch cows and buffaloes were respectively one-third and one-half of their former numbers but the high prices obtained for grain and cotton and the consequent improvement in the condition of the cultivators again enabled them to increase their stock of cattle and the number rose (even after the famine of 1918-19) from 198,000 in 1901-02 to 418,000 in 1922-23. Horses and ponies likewise increased from 2,700 to 6,700, sheep from 26,300 to 41,800, milch cows from 22,900 to 78,000 and she-buffaloes from 40,100 to 89,800. There was also a slight increase in the number of goats.

The average holding ranges from seven acres in Daskroi to twenty-two acres in Gogha. The average assessment per acre in the district is a little over one rupee.

LIABILITY TO FAMINE

Real famines are of rare occurrence in the district ; but shortage of rain, locust plagues and floods (details of which are given in Appendices) often cause considerable distress. The only great famine since 1812-13 caused by drought was that of 1899-1902.

The district cannot therefore be classed as liable to chronic famine in the sense in which the words have been used for the Deccan districts like Ahmednagar, Sholapur or Bijapur. There are, however, well-defined tracts where the effects of a bad season are apt to be more severe than in others, owing partly to the peculiar conditions of cultivation, to the poverty of the soil and lack of irrigational facilities, and partly to the poverty and backward condition of the inhabitants. These areas are put down in the order of their liability to famine and a rough estimate of the maximum number of persons requiring relief in time of famine is shown in brackets.

1. Modasa Mahal (6,000). The barrenness of the soil and the idle and predatory habits of the Kolis, the poorest class in the district, make this tract most liable to distress. Even in good seasons the people live from hand to mouth. In distress they have the *mhowra* flower to supplement other food supplies. There are no irrigation tanks and well irrigation is only practised on a very small scale.

2. The villages in the Parantij taluka along the Khari river (3,000). The condition of this tract is similar to that of the Modasa petha. The soil is poor and sandy, there is little irrigation and the inhabitants, idle and thriftless Kolis, have only agricultural pursuits as a means of livelihood.

3. The Nal Kantha tract (west Dholka and Sanand and south Viramgam) (6,500).

4. The Panchal tract (3,000), *i.e.*, the western portion of the Dhanduka taluka.

5. The Chuval tract in Viramgam (6,000).

6. The Bhal country in Dholka and Dhanduka (8,500).

In the last four tracts the people are poor with little or no accumulated capital or reserve of resources, and their lands and cattle are entirely dependent on the monsoon rains. The country in these tracts does not lend itself to irrigation. In the Nal Kantha, where the soil is greatly inferior to the black soil of the Bhal, the main crops are rice and wheat, the latter dry, the former irrigated from surface ponds. In times of scarcity the roots (*bid* and *theg*) of the Nal and the grass seed (*samo*) form a very considerable support which is readily made use of by the people who are wretchedly poor. The Chuval tract of north Viramgam is sandy and inhabited by a tribe of Kolis averse to labour. The Bhal or black soil country in ordinary years yields heavy crops of wheat and cotton. The soil has a tendency to salt, and sweet water in wells is scarce. The Bhal therefore cannot be protected from famine by well irrigation. In Dhanduka, excessive rain, making the soil too wet for cotton and encouraging weeds so as to seriously diminish the wheat outturn, is more frequent than deficient rainfall which leaves the wells too salt for irrigation.

Lastly the rice growing tracts (28,000), south Daskroi, a great portion of Sanand, and north Dholka, are liable to distress on account of the necessarily precarious nature of rice cultivation, when dependent upon a rainfall so limited as the normal North Gujarat monsoon. The cultivators are however mainly of the advanced Patidar type and the people who would be driven to relief would be mainly agricultural labourers and the poorer classes of petty cultivators.

Nearly the whole of Daskroi, and parts of Sanand, Parantij and Dholka are exceedingly rich, well-wooded and highly tilled. The fields are hedge bound. Well and river irrigation is plentiful and valuable. These tracts would suffer least in times of famine.

FORMER FAMINES

In **1899** there was practically no rain after June. Irrigation was not possible. This meant a complete failure of fodder as well as of food grains throughout the whole district. The destruction of mango and other trees, also an important item in the wealth of the district, was enormous, being partly withered by drought and partly destroyed by the people for the sake of fodder and fuel.

In the succeeding year **1900,** instead of the usual rainfall distributed over the five months from June to November, there was heavy and continuous rain for two months only, August and September. There was thus insufficient rain for early sowing and no rain to bring *kharif* crops to maturity, or to fertilise seed sown for the cold weather harvest. The crop outturn was only one-fifth of the normal. Distress, however, was not nearly so acute as in the preceding year, unexpected assistance being obtained from the growth of a grass seed called *samo*. Prices were also much lower.

In **1901** there was no rain in June and none after September. The July and September rainfall was below the average and the August rainfall much above it. Thus the summer rains began late and ceased early, while the winter rains failed entirely. The outturn was only sixteen per cent. of the average. The scarcity was accentuated by a plague of rats, locusts and grass hoppers which destroyed crops covering over one and a half lakhs of acres. The demand for

relief was much greater than in the previous year. Prices were, however, low and steady.

In **1911** the monsoon opened in the second week of June, but the rain practically ceased in the third week thus retarding *kharif* sowing. As a result of the deficient and capricious rainfall the *kharif* crop yielded almost nothing. The *rabi* crops also did not fare much better except in tracts favoured with facilities for irrigation. An exceeding dearth of fodder was the marked feature of the year and therefore the classes most affected were the cultivators who had to maintain their agricultural stock. The weaker section of the labouring classes also felt the strain but for the ordinary able-bodied labourers there was no lack of employment on a good wage.

The cause of the famine of **1918-19** was insufficient rainfall. The rains had ceased by the end of September (1918) and there was also a long break at the end of August. As a result both the *kharif* and *rabi* crops failed except in places favoured by irrigation. The failure of the fodder crop of the previous year added to the difficulty and great scarcity of food and fodder was experienced.

In **1920** the rains started well and gave an impetus to *kharif* sowings but the subsequent deficient and ill-distributed rains of August and September marred prospects. The outturn of crops was in consequence reduced. Conditions were, however, nowhere so serious as to amount to a regular famine

FORECAST OF RELIEF WORKERS

A rough estimate has already been given of the number of persons in the different tracts who are likely to demand relief. This is however in case of purely local distress. A point for emphasis is the great strain placed upon the resources of the district in a year of wide-spread famine by immigration from outside. Attention must, at the same time, be paid to the fact that the people are now better off than they were twenty-five years ago, thanks principally to the great profits derived from cotton for many years past. To-day a failure of a monsoon does not present the same problem as existed in the famine of 1899. Improved facilities and a more enlightened population make such a contingency easier to cope with than it was then. The cultivators have now attained a sense of responsibility and are able or willing to make their own arrangements—such as shifting to industrial centres, etc.,—when necessities arise. Taking all these factors into consideration it is apparent that it will be only the unsettled tribes like the Vaghris, some of the Kolis and Bhils, and a few of the depressed classes who would require State help. The number of such persons would, it is hoped, not exceed fifty thousand.

As regards fodder, experience shows that merchants and private dealers are quick to supply the seed by importation. There are many people with ample capital and competition keeps the prices fair.

AHMEDABAD STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles	Alienated. No.	Alienated. Area in square miles	Total. No.	Total. Area in square miles	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Area cultivated. Percentage of previous column to area in acres	Cropped (Net). Irrigated.	Cropped (Net). Unirrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Total.
		No.		No.		No.		No.	No.	Rs.	No.	Acs.		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	N. Daskroi	76	170	9	22	85	192	350,275	1,825	3,58,355	86	116,258	93·2	6,587	76,514	7,959	91,060	4,163	..	21,035	25,198
2	S. Daskroi	65	202	4	13	69	215	63,689	296	1,91,654	66	131,614	95·3	10,495	59,301	27,524	97,320	12,518	..	21,726	34,244
3	Prantij	115	282	1	4	116	286	65,272	228	1,25,944	115	183,466	99·2	6,774	108,792	13,549	129,115	22,025	..	32,317	54,342
4	Modasa Peta	65	153	2	8	67	161	27,975	175	43,497	65	100,625	97·6	2,659	26,123	16,560	45,282	27,466	12,017	19,860	59,343
5	Sanand	65	282	3	17	68	299	44,737	149	1,47,548	65	189,497	94·2	4,956	97,721	56,543	159,220	4,873	..	16,402	21,277
6	Viramgaon	149	573	17	100	166	673	135,010	200	2,06,716	149	367,277	85·2	1,798	224,581	37,382	314,061	7,578	..	45,577	53,155
7	Dholka	118	672	5	9	123	681	85,463	125	1,06,327	119	413,470	94·7	3,950	203,289	107,033	317,472	24,039	..	21,959	45,998
8	Dhandhuka	151	1,063	4	20	155	1,083	87,808	81	2,52,096	123	567,160	83·6	8,989	235,351	132,425	376,815	5,069	..	205,276	210,345
9	Gogha Peta	59	206	5	18	64	224	30,598	136	40,272	59	131,496	91·8	2,979	51,084	36,751	90,794	298	..	40,404	40,702
	Total	843	3,605	50	211	893	3,816	890,825	233	17,21,404	821	2,211,857	90·3	51,787	1,133,051	436,346	1,621,189	107,995	12,017	470,656	590,668

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowari.	Bajri.	Maize.	Other cereals and pulses.	Sugar-cane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	N. Daskroi	3,675	954	242	342	..	5,213	25	24	587	644	996	7,083	156	6,927
2	S. Daskroi	4,740	3,462	2,574	105	400	11,281	300	1,021	..	321	12,791	250	12,541
3	Prantij	720	3,438	934	..	..	5,092	112	1,493	13	146	..	188	7,044	230	6,814
4	Modasa Peta	..	1,881	265	..	..	2,146	276	111	..	67	..	491	3,031	1,031	2,126
5	Sanand	..	5,166	2,608	2,162	..	9,936	..	..	..	40	..	12	5,173	6	5,166
6	Viramgaon	..	1,929	846	1,081	..	3,856	..	..	..	101	..	216	1,929	..	1,929
7	Dholka	1,648	1,900	1,207	217	..	4,972	230	726	70	553	6,698	..	130	6,568
8	Dhandhuka	..	5,442	3	..	..	5,445	24	286	..	745	6,105	12,606	..	12,606
9	Gogha Peta	..	3,219	..	2,009	..	5,228	..	844	..	18	513	35	3,219	..	3,219
	Total	14,192	20,425	5,826	2,578	400	43,072	390	1,974	871	3,747	34,814	8,861	59,573	875	58,698

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and Area of Villages. Government. No.	Government. Area in square miles	Alienated. No.	Alienated. Area in square miles	Total. No.	Total. Area in square miles	Population (1911). Total.	Density per square mile.	Land Revenue.	Area for which Agricultural Statistics are available. Villages.	Area in acres.	Area cultivated. Percentage of previous column to area in acres	Cropped (Net). Irrigated.	Cropped (Net). Unirrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Total.
		No.		No.		No.		No.	No.	Rs.	No.	Acs.		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	N. Daskroi	80	170	9	22	89	192	346,921	1,806	3,66,564	83	116,084	93·2	16,378	49,550	31,256	91,186	4,589	..	20,309	24,898
2	S. Daskroi	63	202	3	13	66	215	66,454	309	1,91,428	63	131,428	95·3	21,668	35,930	37,758	95,356	19,023	..	17,049	36,072
3	Prantij	115	282	1	4	116	286	62,118	217	1,26,287	115	183,418	99·8	10,240	65,879	40,739	116,858	34,854	..	31,706	66,560
4	Modasa Peta	65	153	2	8	67	161	26,328	163	43,721	65	100,098	98·1	4,219	9,009	24,414	37,642	35,397	12,032	15,579	63,008
5	Sanand	65	282	3	17	68	299	43,330	145	1,47,731	65	189,486	94·2	8,917	52,936	92,248	159,101	5,121	..	16,264	21,385
6	Viramgaon	149	573	17	100	166	673	127,415	189	1,50,404	149	367,042	85·2	4,351	202,994	107,721	314,296	7,720	..	45,476	52,746
7	Dholka	118	672	5	9	123	681	97,195	143	1,06,845	120	415,456	94·2	19,057	95,340	204,195	318,787	26,647	..	70,022	96,669
8	Dhandhuka	151	1,063	4	20	155	1,083	95,446	88	2,52,096	123	567,182	83·6	16,192	104,526	254,070	374,790	5,372	..	207,020	212,392
9	Gogha Peta	59	206	5	18	64	224	30,056	134	40,272	59	131,496	91·8	3,738	45,910	41,189	90,837	298	..	40,391	40,689
	Total	847	3,605	50	211	893	3,816	827,809	216	4,12,058	825	2,213,242	90·3	104,735	635,976	858,142	1,598,853	138,541	12,032	463,816	614,389

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowari.	Bajri.	Maize.	Other cereals and pulses.	Sugar-cane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	N. Daskroi	98	..	16,216	27	16,365	Separate figures not available.	2,338	..	..	..	..	..	10,871	..	1,088	3,243	17,541	1,176	16,365
2	S. Daskroi	194	377	20,887	203	21,662	..	3,822	..	..	..	..	..	3,839	..	693	22,463	741	21,662	
3	Prantij	481	529	29	8,480	761	10,280	..	4,698	..	..	..	..	1,457	..	147	965	11,267	987	10,280
4	Modasa Peta	..	..	4,201	18	4,219	..	618	..	..	..	..	..	3,382	..	301	301	4,602	383	4,219
5	Sanand	..	..	8,917	..	8,917	..	2,474	..	..	..	..	..	5,466	..	1,904	9,378	9,844	9,917	8,917
6	Viramgaon	..	140	4,186	83	4,331	..	1,141	..	..	..	..	..	1,530	..	481	1,746	4,465	134	4,331
7	Dholka	..	..	17,871	1,181	19,052	..	4,492	..	..	..	..	..	12,585	..	856	3,991	20,323	1,271	19,052
8	Dhandhuka	..	..	16,192	..	16,192	..	6,051	..	..	..	..	..	6,097	..	818	5,253	16,215	1,023	16,192
9	Gogha Peta	..	..	3,217	..	3,217	..	1,531	..	..	..	..	..	3,461	..	155	271	5,418	1,701	3,717
	Total	707	996	170	100,581	2,273	104,735	..	22,351					66,068		4,120	19,613	112,152	7,417	104,735

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Barley.	Gram.	Other Cereals and Pulses.	Total of Cereals and Pulses.	Pulses.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	North Daskroi	28,133	25,127	4,864	954	9	4	242	55	5,625	65,013				3,080	1,767		4,847	725	725	160
2	South Daskroi	17,079	17,873	7,520	3,445	..	..	2,324	261	6,301	56,153				1,562	1,199		2,681	145	145	405
3	Prantij	7,565	25,305	5,958	4,378	57	401	1,256	6,224	10,348	72,092				21,606	2,954		24,760	186	186	148
4	Modasa Peta	1,288	6,283	1,470	1,881	877	4,550	260	321	4,342	21,459				569	1,418		1,987	52	52	440
5	Sanand	24,258	6,700	4,002	13,100	25	..	341	362	4,482	53,270				551	772		1,323	1,187	1,187	2
6	Viramgaon	29,159	34,202	846	26,421	..	..	1,664	3,421	10,548	104,291				1,598	804		2,402	38	38	1
7	Dholka	36,837	9,211	3,556	86,708	505	..	1,210	2,612	7,520	148,159				1,728	3,292		5,020	514	514	528
8	Dhandhuka	29,720	25,888	..	58,962	..	..	5	3,488	7,307	125,370				744	6,923		7,667	41	41	286
9	Gogha Peta	25,596	6,482	1	874	..	..	..	11	13,084	45,846				355	14		369	4	4	18
	Total	317,200	166,271	27,318	196,724	1,473	4,957	6,155	17,349	26,004	813,451				32,393	19,063		51,456	2,855	2,855	1,734

No.	Taluka.	Drugs and Narcotics. Total.	Oil Seeds. Sesamum.	Linseed.	Rape and Mustard.	Castor Seed.	Groundnut.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped. twice	Remainder cropped.	Net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	North Daskroi	610	..	..	..	2,428	..	1	3,044	..	16,937	191	16,728	541	91,093	1,175	89,920	
2	South Daskroi	41	1,772	1	..	..	..	..	2,119	..	12,623	149	12,822	2,989	77,611	2,413	75,198	
3	Prantij	186	2,702	5,531	1	1,478	..	..	9,443	427	5,220	1,902	7,549	108,455	2,637	105,818		
4	Modasa Peta	52	4,590	..	77	42	1	..	4,710	..	1,048	427	1,475	3,194	32,317	2,536	29,781	
5	Sanand	1,187	2	..	..	241	..	..	243	..	44,179	224	44,403	1,407	109,521	64	109,457	
6	Viramgaon	38	1	..	..	1,200	..	..	1,201	..	1,856	200	2,056	1,198	109,668	2,062	107,606	
7	Dholka	514	528	230	2,197	47	883	..	616	3,832	200	56,032	25	56,057	1,936	216,428	1,059	215,379
8	Dhandhuka	4	111	286	4,821	..	..	10	..	11,023	38	97,690	..	97,690	1,720	311,252	1,059	311,193
9	Gogha Peta	4	28	18	1,256	..	..	..	..	1,256	..	3,044	..	3,044	10,082	60,649	2,056	58,593
	Total	2,855	1,734	882	19,327	89	5,558	9,418	5,543	617	40,552	300	385,092	12,228	387,370	44,615	1,348,215	13,455

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Barley.	Gram.	Other Cereals and Pulses.	Total of Cereals and Pulses.	Pulses.	Orchard and Garden Produce. Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	North Daskroi	20,193	18,182	20	2,340	2	13	1,258	14	1,593	43,601		2,521	317	..	317	263	48
2	South Daskroi	12,256	7,712	273	4,095	22	12	2,855	49	1,014	28,766		868	23	..	23	223	218
3	Prantij	7,117	20,327	618	1,798	223	280	1,729	261	8,045	44,026		17,242	58	..	58	172	75
4	Modasa Peta	133	4,479	68	618	47	4,363	388	..	1,115	11,113		668	14	..	14	137	..
5	Sanand	15,179	2,431	8	2,428	..	..	1,291	2	276	21,615		1,451	12	..	12	..	2
6	Viramgaon	59,827	5,647	2	6,014	..	..	498	115	1,695	73,693		5,647	..	..	..	153	24
7	Dholka	19,565	1,889	27	5,091	..	..	2,168	49	571	29,360		972	15	..	15	625	62
8	Dhandhuka	42,548	3,899	..	3,797	..	..	1,008	350	1,005	54,227		162	..	..	..	83	601
9	Gogha Peta	42,092	2,740	53	1,531	..	..	..	..	4,884	51,220		202	1	..	1	119	29
	Total	219,810	66,507	1,053	29,664	116	8,168	11,102	841	20,136	356,556		29,118	555	..	555	1,630	1,035

No.	Taluka.	Oil Seeds. Sesamum.	Linseed.	Rape and Mustard.	Castor Seed.	Groundnut.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped. twice	Remainder cropped.	Net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	North Daskroi	376	..	..	3,423	..	1	3,799	4,125	..	14,581	31	14,612	3,231	68,730	4,499	64,231	
2	South Daskroi	136	..	..	1,455	..	..	1,591	1,759	..	7,149	15	7,164	4,228	43,249	4,131	39,118	
3	Prantij	406	..	6	1,372	..	..	1,778	2,185	..	4,960	503	5,463	1,276	80,115	6,448	73,667	
4	Modasa Peta	..	..	..	57	..	..	57	472	..	1,769	82	1,851	957	15,213	1,662	13,546	
5	Sanand	..	..	..	911	..	..	911	911	..	34,739	..	34,739	7,323	64,618	1,112	63,501	
6	Viramgaon	153	24	..	..	..	..	1,102	1,279	..	153,121	..	153,130	2,160	235,955	800	235,155	
7	Dholka	14	..	..	420	368	23	826	1,016	..	28,107	237	28,344	1,592	132,568	2,834	129,734	
8	Dhandhuka	2	..	..	3	914	..	914	1,733	153,266	..	153,266	578	152,688				
9	Gogha Peta	..	..	..	..	343	..	343	..	2,587	..	2,587	2,248	56,749	2,691	54,058		
	Total	1,053	29,664	116	8,168	11,102	841	20,136	356,556		29,118	555	..	555	1,630	1,035	3,936	24

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	He-buffaloes.	Bulls.	Bull-buffaloes.	For Breeding.	For other purposes. Oxen.	He-buffaloes.	Milch Cattle. Cows.	She-buffaloes.	Young Stock. Calves.	Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Carts. Large, i.e., of over 2 Cattle.	For passengers.	For product and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	North Daskroi	9,746	8	36	54	1,799	24	5,765	13,161	3,125	9,605	49,953	1,226	2,775	7,537	4,473	64	625	2,318	18	10,139	8·6
2	South Daskroi	12,014	8	63	482	256	9	4,776	11,976	4,302	7,712	41,144	146	1,649	6,941	5,943	28	457	2,128	14	12,439	8·6
3	Prantij	16,549	37	68	778	101	61	11,503	15,521	14,913	11,023	67,975	1,915	3,302	9,580	9,313	14	29	1,868	14	24,877	10·1
4	Modasa Peta	2,345	3	33	40	500	1	6,449	4,675	2,878	2,594	29,516	300	166	5,939	3,522	11	28	747	11	2,459	12·2
5	Sanand	9,931	24	148	97	237	251	5,164	7,833	2,826	4,278	30,395	373	969	2,672	4,781	11	87	1,714	22	22,367	6·6
6	Viramgaon	21,059	19	175	1,107	68	68	17,703	17,023	7,626	11,539	72,455	1,545	8,098	9,952	8,983	..	174	4,886	29	17,362	10·2
7	Dholka	16,040	301	90	661	461	46	11,138	10,165	7,179	5,544	50,748	640	9,462	7,370	7,112	47	476	3,099	34	14,888	8·8
8	Dhandhuka	17,266	4	86	499	623	21	11,612	6,998	7,584	3,501	47,840	1,224	12,229	13,615	4,138	2,385	529	3,231	37	18,491	5·0
9	Gogha Peta	5,335	9	14	49	114	4	2,848	4,473	2,908	2,221	18,575	328	9,135	6,504	2,166	2	17	935	20	24·8	
	Total	115,327	99	685	551	5,196	234	78,108	89,766	58,739	59,094	407,801	6,741	41,828	99,119	49,961	2,551	2,418	20,924	24·8	107,177	

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	He-buffaloes.	Bulls.	Bull-buffaloes.	For Breeding.	For other purposes. Oxen.	He-buffaloes.	Milch-Cattle. Cows.	She-buffaloes.	Young-Stock. Calves.	Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Carts. Large, i.e., of over 2 Cattle.	For passengers.	For product and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	North Daskroi	10,139	12	63	32	152	10	6,972	12,905	4,647	10,910	51,867	43	2,587	12,214	4,777	2	216	1,278	18	9·4
2	South Daskroi	21,420	175	384	96	468	282	14,404	20,958	11,378	16,076	85,619	371	2,963	10,331	9,897	1	524	3,347	15·1	
3	Prantij	24,877	20	119	127	459	12	22,367	20,652	31,976	16,137	116,746	1,124	4,410	18,053	11,859	4	47	1,399	9·0	
4	Modasa Peta	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	Sanand	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Viramgaon	17,362	10	124	76	405	8	15,321	14,318	9,648	10,732	68,004	1,059	8,019	6,142	8,175	1	145	3,470	22·7	
7	Dholka	14,888	88	92	75	434	17	15,824	12,263	11,472	8,727	63,878	417	4,686	7,012	7,051	36	348	3,495	26·9	
8	Dhandhuka	18,491	50	90	112	419	21	14,491	10,699	14,265	8,026	56,663	1,398	18,907	18,274	6,979	257	125	3,643	29·9	
9	Gogha Peta	Information for Petas is not seperately available for 1915-16.																			
	Total	107,177	358	872	538	2,337	350	89,379	91,769	83,386	70,608	446,774	4,454	41,472	67,626	48,718	294	1,407	17,341	19·4	

AHMEDABAD STATISTICAL TABLES—II.

Water Supply—1922-23

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	North Daskroi	4	..	..	1	..	..	419	2,330	2,749	549	84	389	13	348
2	South Daskroi	4	..	..	30	..	..	174	3,438	3,612	350	47	304	30	158
3	Prantij	23	..	..	..	..	..	666	1,213	1,879	111	12	17	1	217
4	Modasa Peta	..	..	..	..	..	..	262	900	1,162	134	2	..	..	110
5	Sanand	..	..	..	..	..	..	5	969	974	134	41	266	13	253
6	Viramgaum	..	..	..	..	..	..	139	844	984	223	49	50	845	44
7	Dholka	..	..	..	..	..	..	210	2,508	2,718	368	167	260	7	332
8	Dhandhuka	..	..	..	..	..	..	1,115	759	1,874	267	230	..	52	101
9	Gogha Peta	..	..	..	..	..	..	946	375	1,321	95	51	..	15	10
	Total ..	28	..	..	31	..	..	3,936	13,337	17,273	2,231	683	1,275	181	2,394

No.	Taluka.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.
1	North Daskroi	9	7	8
2	South Daskroi	7	4	3
3	Prantij	85	5	16
4	Modasa Peta	15	..	..
5	Sanand	..	..	..
6	Viramgaum	50	845	..
7	Dholka	198	..	6
8	Dhandhuka	..	..	1
9	Gogha Peta	22	3	..
	Total ..	329	19	34

Government Protective Irrigation Works—1922-23

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Hathmati Canal ..	44,744	28,840	11,336	8,000	820	3,049	3,869
2	Kheri Cut Canal ..	32,000	20,000	16,000	16,000	3,797	2,219	6,016
	Total ..	76,744	48,840	27,336	24,000	4,617	5,268	9,885

Holdings—1921-22

No.	Taluka.	Number of Holdings. Under and up to 5 Acres.	Over 5 and up to 25 Acres.	25 to 100 Acres.	100 to 500 Acres.	Over 500 Acres.	Total Number.	Total Area.	Average. Area of Holding.	Average. Assessment per Holding.	Average. Assessment per Acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	North Daskroi ..	9,655	5,465	201	7	5	15,333	99,998	6 52	12 1 10	1 13 9
2	South Daskroi ..	11,172	5,127	333	27	1	16,710	103,202	6 12	13 10 6	2 1 11
3	Prantij ..	4,601	3,524	375	25	1	8,526	68,921	8 00	9 0 0	1 1 9
4	Modasa Peta ..	2,308	1,306	60	11	1	3,686	24,802	3 70	2 7 10	0 5 10
5	Sanand ..	2,809	1,299	481	45	18	5,441	77,726	13 77	14 2 5	1 0 4
6	Viramgaum ..	7,154	2,404	1,870	159	12	10,599	188,523	17 78	20 2 8	1 2 1
7	Dholka ..	6,048	4,724	857	85	19	11,733	155,202	13 22	11 14 0	0 14 4
8	Dhandhuka ..	914	1,330	418	68	2	2,732	52,402	19 18	21 7 11	1 2 8
9	Gogha Peta ..	127	139	42	8	1	317	6,708	21 16	11 5 7	0 8 4
	Total ..	40,784	29,368	4,637	435	53	75,277	777,494	12 16	13 7 1	1 2 1

Incidence of Assessment—1920-21

No.	Taluka.	Fully Assessed Area. Area.	Assessment.	Incidence per Acre.	Fully Assessed Area including Alienated Land in Government Villages. Population.	Incidence per Head of population including Alienations.
		Acres.	Rupees.	Rs. a. p.	No.	Rs. a. p.
1	North Daskroi ..	59,597	1,87,104	3 2 2	65,514	4 14 1
2	South Daskroi ..	57,773	2,09,799	3 10 1	56,556	4 13 1
3	Prantij ..	46,820	79,577	1 11 2	39,721	2 7 7
4	Modasa Peta ..	18,544	24,618	1 5 10	23,610	1 4 9
5	Sanand ..	46,172	79,738	1 10 7	24,904	3 15 5
6	Viramgaum ..	154,525	2,13,812	1 6 2	78,889	3 0 1
7	Dholka ..	62,994	1,38,700	2 3 2	54,629	3 6 3
8	Dhandhuka ..	34,620	61,782	1 12 7	21,370	3 1 4
9	Gogha Peta ..	3,678	3,635	0 15 9	5,846	1 2 8
	Total ..	484,521	9,98,765	2 1 1	370,529	3 8 8

Government Protective Irrigation Works—1918-19

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Hathmati Canal ..	44,744	28,840	11,336	8,000	1,194	259	1,453
2	Kheri Cut Canal ..	32,000	20,000	16,000	16,000	1,393	2	1,395
	Total ..	76,744	48,840	27,336	24,000	2,587	261	2,848

Ahmedabad—Rainfall

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Ahmedabad (Daskroi)	Maximum 1894	0·25	..	..	..	0·03	7·15	32·78	31·73	6·28	1·39	..	..	51·61
		Minimum 1899	..	..	..	..	0·06	3·08	0·13	0·02	1·43	..	..	..	4·72
		Average ..	0·02	0·13	0·01	0·02	0·44	3·89	11·89	7·60	4·27	0·53	0·15	0·03	29·00
		Rainfall for 1922-23 ..	..	0·18	..	..	0·52	4·96	3·98	11·07	..	..	..	..	31·81
2	Prantij	Maximum 1894	0·40	..	..	..	0·14	12·50	29·58	4·16	4·50	0·21	..	..	51·49
		Minimum 1899	..	..	..	..	0·06	2·50	0·30	0·05	0·41	0·12	..	..	3·69
		Average ..	0·09	0·08	0·08	0·02	0·40	4·21	12·11	2·73	1·90	0·42	0·20	0·04	30·28
		Rainfall for 1922-23 ..	..	..	..	..	..	1·98	15·41	5·00	4·52	..	..	..	26·91
3	Modasa P	Maximum 1893	0·35	..	..	0·82	19·28	19·89	5·05	10·25	..	2·29	..	60·93	
		Minimum 1899	..	..	..	2·04	2·93	0·71	..	0·16	0·24	..	..	6·13	
		Average ..	0·06	0·10	0·06	0·05	0·71	4·38	13·00	4·66	0·51	0·20	0·03	353·57	
		Rainfall for 1922-23 ..	..	0·04	..	..	..	3·49	12·81	6·37	8·42	..	0·41	..	31·54
4	Sanand	Maximum 1917	..	0·26	..	..	5·05	2·53	18·77	13·75	10·98	8·67	..	..	60·01
		Minimum 1899	..	..	..	..	0·28	6·42	0·09	0·03	0·67	..	..	..	7·51
		Average ..	0·04	0·11	0·04	0·03	0·45	3·71	12·04	6·98	4·02	0·53	0·25	0·03	28·23
		Rainfall for 1922-23 ..	..	0·11	..	..	..	1·92	8·56	2·42	6·94	..	..	..	20·00
5	Viramgaum	Maximum 1892	0·01	0·08	..	..	0·07	8·73	11·04	13·25	21·75	0·13	..	..	55·06
		Minimum 1899	..	..	..	..	0·08	4·04	0·10	..	0·06	..	..	0·07	4·65
		Average ..	0·04	0·11	0·08	0·01	0·50	3·52	11·01	6·88	3·96	0·37	0·22	0·03	26·23
		Rainfall for 1922-23 ..	..	0·02	..	..	..	2·65	13·03	1·87	13·39	..	..	..	30·96
6	Kharagheda D	Maximum 1917	..	..	0·04	0·08	2·30	0·85	15·20	11·97	6·84	4·77	..	..	42·14
		Minimum 1911	..	..	0·96	..	..	1·42	0·24	0·36	0·36	..	0·05	..	2·44
		Average ..	0·03	0·10	0·09	0·01	0·26	2·62	6·81	6·56	1·73	0·68	0·05	0·03	18·97
		Rainfall for 1922-23 ..	..	..	..	..	..	1·74	7·93	1·70	9·77	..	..	..	21·14
7	Mandal D.	Maximum 1907	0·06	0·56	..	..	..	2·68	12·09	18·03	0·04	..	..	..	33·46
		Minimum 1911	..	..	0·86	..	..	2·67	9·34	0·04	0·73	..	0·07	..	5·05
		Average ..	0·03	0·12	0·09	..	0·56	2·94	7·73	7·63	2·07	0·69	0·04	..	21·92
		Rainfall for 1922-23 ..	..	..	..	..	..	0·63	11·90	0·77	8·21	..	..	..	21·51
8	Dholka	Maximum 1917	..	1·92	..	0·19	4·14	3·56	11·22	14·12	14·22	3·96	..	..	53·31
		Minimum 1918	..	..	..	..	..	0·27	2·23	0·11	0·09	..	..	..	3·09
		Average ..	0·05	0·13	0·04	0·02	0·47	4·36	12·78	7·71	4·48	0·45	0·23	0·03	30·75
		Rainfall for 1922-23 ..	..	0·07	..	..	0·04	1·87	8·47	2·91	7·82	..	..	..	21·18
9	Dhandhuka	Maximum 1894	0·02	..	0·02	..	0·12	11·45	29·99	1·58	8·28	6·58	..	..	58·04
		Minimum 1918	..	..	..	..	0·20	0·10	2·00	3·86	0·12	0·08	..	..	6·44
		Average ..	0·03	0·09	0·05	0·04	0·41	4·21	9·55	6·22	3·52	1·13	0·16	0·04	25·80
		Rainfall for 1922-23 ..	..	0·34	..	..	..	4·21	3·88	1·21	6·22	..	..	..	15·87
10	Ranpur D	Maximum 1917	..	..	..	..	2·61	5·23	6·24	5·77	7·01	10·92	..	..	37·78
		Minimum 1911	..	..	0·84	..	0·65	5·02	1·08	2·26	0·70	..	..	..	8·55
		Average ..	0·01	0·07	0·08	0·06	0·55	5·32	6·65	4·89	2·48	1·32	0·16	0·03	21·62
		Rainfall for 1922-23 ..	..	0·07	..	..	0·08	2·91	6·23	0·80	3·90	..	..	..	14·00
11	Dholera D	Maximum 1894	0·58	..	0·01	..	0·23	8·28	22·38	2·90	9·18	7·01	..	..	50·57
		Minimum 1899	..	..	..	..	0·26	8·24	0·16	0·34	1·41	..	..	..	10·41
		Average ..	0·09	0·06	0·06	0·04	0·68	3·70	9·70	3·91	4·02	0·89	0·20	0·05	24·04
		Rainfall for 1922-23 ..	..	0·41	..	..	..	4·23	4·89	0·95	4·72	..	0·45	..	15·66
12	Gogha P	Maximum 1894	0·02	..	..	..	0·47	5·81	18·34	4·76	9·73	8·66	..	0·55	48·34
		Minimum 1899	..	..	..	..	0·07	4·64	0·01	..	2·00	..	..	..	6·72
		Average ..	0·12	0·03	0·05	0·04	0·43	4·53	9·29	5·32	4·01	1·12	0·23	0·04	25·42
		Rainfall for 1922-23 ..	..	0·80	..	..	..	7·68	5·59	3·58	4·41	..	..	..	22·06

Temperature Details (Ahmedabad)

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F
1913	Mean Maximum ..	85	87	93	105	106	97	90	87	91	98	93	84
	,, Minimum ..	57	61	63	74	79	78	77	75	75	72	64	58
	Absolute Maximum ..	89	95	102	112	112	110	99	91	102	103	98	90
	,, Minimum ..	52	49	56	66	75	73	74	72	72	67	59	51
1914	Mean Maximum ..	87	86	94	103	107	100	89	90	91	95	93	85
	,, Minimum ..	59	58	64	75	79	77	76	73	73	71	68	63
	Absolute Maximum ..	90	92	104	111	113	106	95	93	97	98	98	91
	,, Minimum ..	56	51	58	67	73	72	73	73	71	66	60	48
1915	Mean Maximum ..	84	85	95	102	108	105	99	93	99	95	95	88
	,, Minimum ..	57	58	67	75	80	80	80	77	78	74	67	60
	Absolute Maximum ..	92	92	105	112	114	111	103	99	102	102	100	94
	,, Minimum ..	48	50	60	66	75	73	76	76	75	67	63	52
1916	Mean Maximum ..	87	85	102	103	109	102	96	89	93	94	91	86
	,, Minimum ..	59	57	70	74	79	81	79	76	77	72	63	57
	Absolute Maximum ..	95	95	109	107	112	108	103	97	98	99	94	90
	,, Minimum ..	52	42	62	70	72	71	74	74	74	60	58	51
1917	Mean Maximum ..	87	89	97	102	98	98	91	88	89	89	87	84
	,, Minimum ..	60	61	66	73	74	79	78	76	75	71	59	57
	Absolute Maximum ..	91	92	105	110	105	104	97	93	96	96	93	88
	,, Minimum ..	54	53	57	67	69	73	74	73	70	60	55	49
1918	Mean Maximum ..	83	89	97	101	107	102	97	93	93	102	96	85
	,, Minimum ..	57	60	67	74	80	79	78	76	76	70	60	58
	Absolute Maximum ..	90	97	104	110	112	105	101	101	100	106	101	91
	,, Minimum ..	49	48	54	61	74	72	76	72	71	64	60	50
1919	Mean Maximum ..	85	89	98	104	108	102	92	87	93	98	92	85
	,, Minimum ..	59	60	67	74	80	81	77	76	76	71	68	58
	Absolute Maximum ..	92	96	107	111	114	109	99	93	103	104	101	89
	,, Minimum ..	50	51	59	69	73	74	75	74	73	69	64	51
1920	Mean Maximum ..	86	88	98	105	104	97	92	92	96	101	95	88
	,, Minimum ..	61	58	67	73	76	78	77	75	76	73	68	58
	Absolute Maximum ..	90	103	107	110	114	111	100	98	103	108	101	93
	,, Minimum ..	53	36	59	65	66	61	73	73	73	67	60	51
1921	Mean Maximum ..	86	91	102	107	109	105	96	89	87	94	92	87
	,, Minimum ..	57	59	68	75	79	82	80	76	75	72	64	61
	Absolute Maximum ..	93	100	109	111	114	107	105	92	91	97	95	89
	,, Minimum ..	50	51	62	70	76	78	75	74	71	65	59	55
1922	Mean Maximum ..	82	88	95	105	107	103	98	77	75	75	71	84
	,, Minimum ..	57	61	67	76	78	81	77	75	75	70	65	57
	Absolute Maximum ..	89	95	104	110	113	107	102	91	98	98	98	92
	,, Minimum ..	49	55	55	69	73	76	74	73	73	66	57	50

Prices—1922-23

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Tuvardal.	Gram.	Ghee. Indian.	Ghee. Dalda.	Wages per diem per man. Skilled Labour	Ordinary Labour	Field Labour
	Head-quarter town.								Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Daskroi (North) ..	19	14	10	9	43	48	28	2 8 0	1 0 0	1 0 0
	Non-headquartertowns										
2	Prantij ..	22	17	10	9	..	..	..	1 13 4	0 11 8	0 15 8
3	Modasa Peta ..	16	15	10	9	..	..	..	2 2 4	0 10 8	0 7 10
4	Sanand Peta ..	21	15	10	11	142	32	26	2 0 0	0 12 0	0 9 0
5	Viramgaum ..	21	15	10	10	329	59	28	2 0 0	0 8 0	1 0 0
6	Dholka ..	22	16	10	11	460	52	26	2 12 0	0 12 0	0 12 0
7	Dhandhuka ..	18	12	10	9	63	116	27	2 6 0	0 9 11	0 8 6
8	Gogha Peta ..	19	13	10	7	34	61	25	2 0 0	0 10 0	0 11 2
	Average of the non-headquarter towns ..	20	15	10	9	41	89	26	2 2 0	0 11 6	0 11 11

Prices—Pre-war Normal

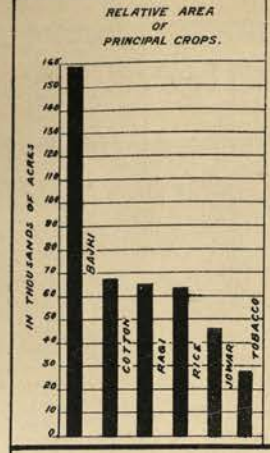
Taluka.	Prices in lbs. per Rupee. Jowari.	Bajri.	Rice.	Tuvardal.	Jowari fodder.	Gram.	Wages per diem per man. Skilled Labour	Ordinary Labour	Field Labour
							Rs. a. p.	Rs. a. p.	Rs. a. p.
Daskroi (North) ..	26	23	16	18	47	102	0 12 6	0 4 8	0 4 10
Prantij ..	26	25	17	17	160	199	0 11 11	0 3 8	0 4 8
Modasa Peta ..	28	28	15	16	204	310	0 10 3	0 3 9	0 3 9
Sanand Peta ..	26	22	16	17	43	128	0 12 0	0 4 0	0 5 4
Viramgaum ..	26	22	16	17	24	142	0 8 0	0 3 6	0 3 6
Dholka ..	26	22	16	18	48	40	0 8 11	0 3 5	0 3 9
Dhandhuka ..	27	21	15	16	142	169	0 8 0	0 3 6	0 3 6
Gogha Peta ..	25	19	11	13	77	150	0 8 9	0 3 1	0 3 3
Average for the period ..	26	22	15	16	82	147	0 10 9	0 3 9	0 4 3

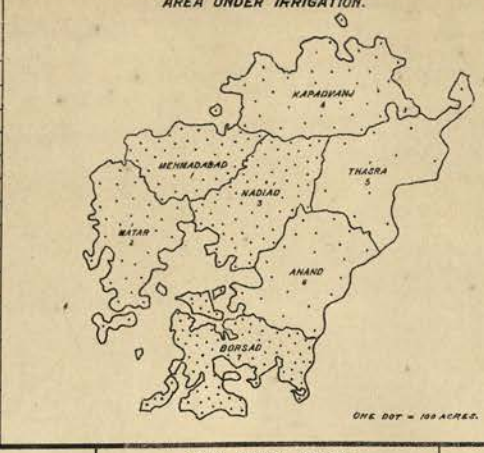
Famine Relief—Average Daily Number 1911-12, 1918-19 and 1920-21

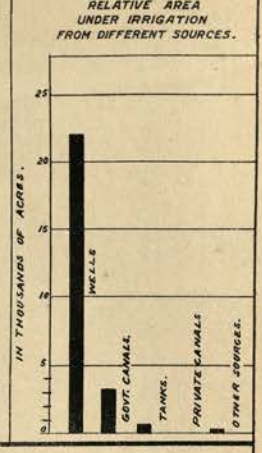
Month.	1911-12. Relief Workers.	Dependants.	Gratuitously relieved.	Total daily average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependants.	Gratuitously relieved.	Total daily average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependants.	Gratuitously relieved.	Total daily average.	Price in lbs. per Rupee. Jowari.	Bajri.
November	No relief works were opened.						..	..	542	542	16	6	No relief works were opened.					
December							..	..	546	546	8	6						
January							..	..	723	723	8	6						
February							44	..	1,416	1,460	9	6						
March							245	..	2,905	3,040	10	7						
April							248	..	5,030	5,241	10	9						
May							1,679	..	6,002	6,950	10	9						
June							2,469	..	5,814	7,443	9	8						
July							8,199	..	5,966	8,275	9	8						
August							..	..	2,704	3,951	10	9						
September							..	..	18	18	12	11						
Average for the period							586	..	2,869	3,455	10	8						

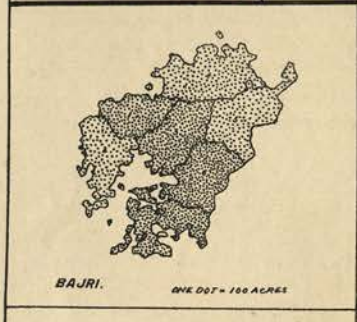
KAIRA DISTRICT

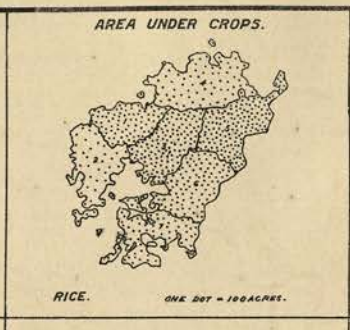
KAIRA DISTRICT.

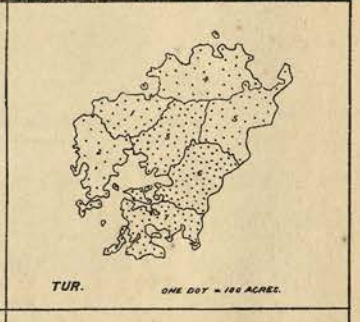


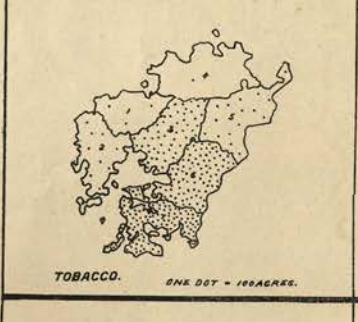


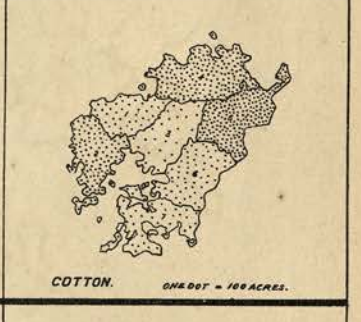


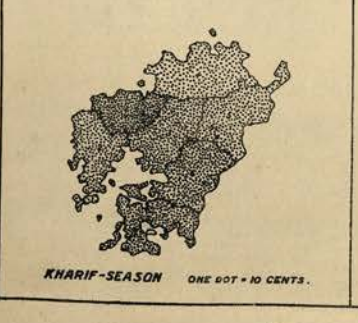


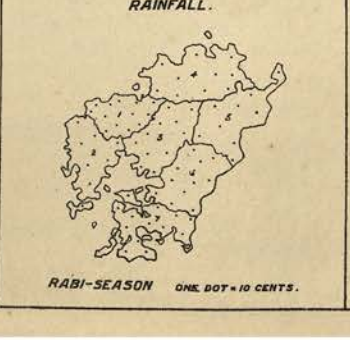








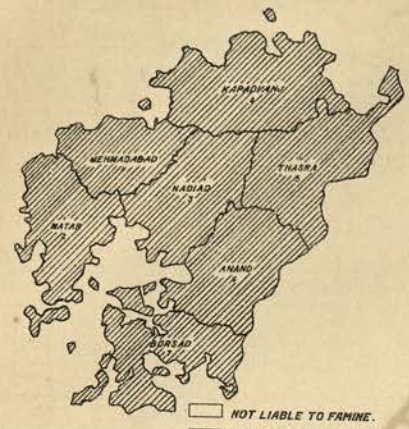




KAIRA DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.



INTENSITY OF FAMINE IN 1911-12.

INTENSITY OF FAMINE IN 1918-19.

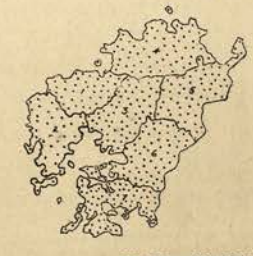
INTENSITY OF FAMINE IN 1920-21.

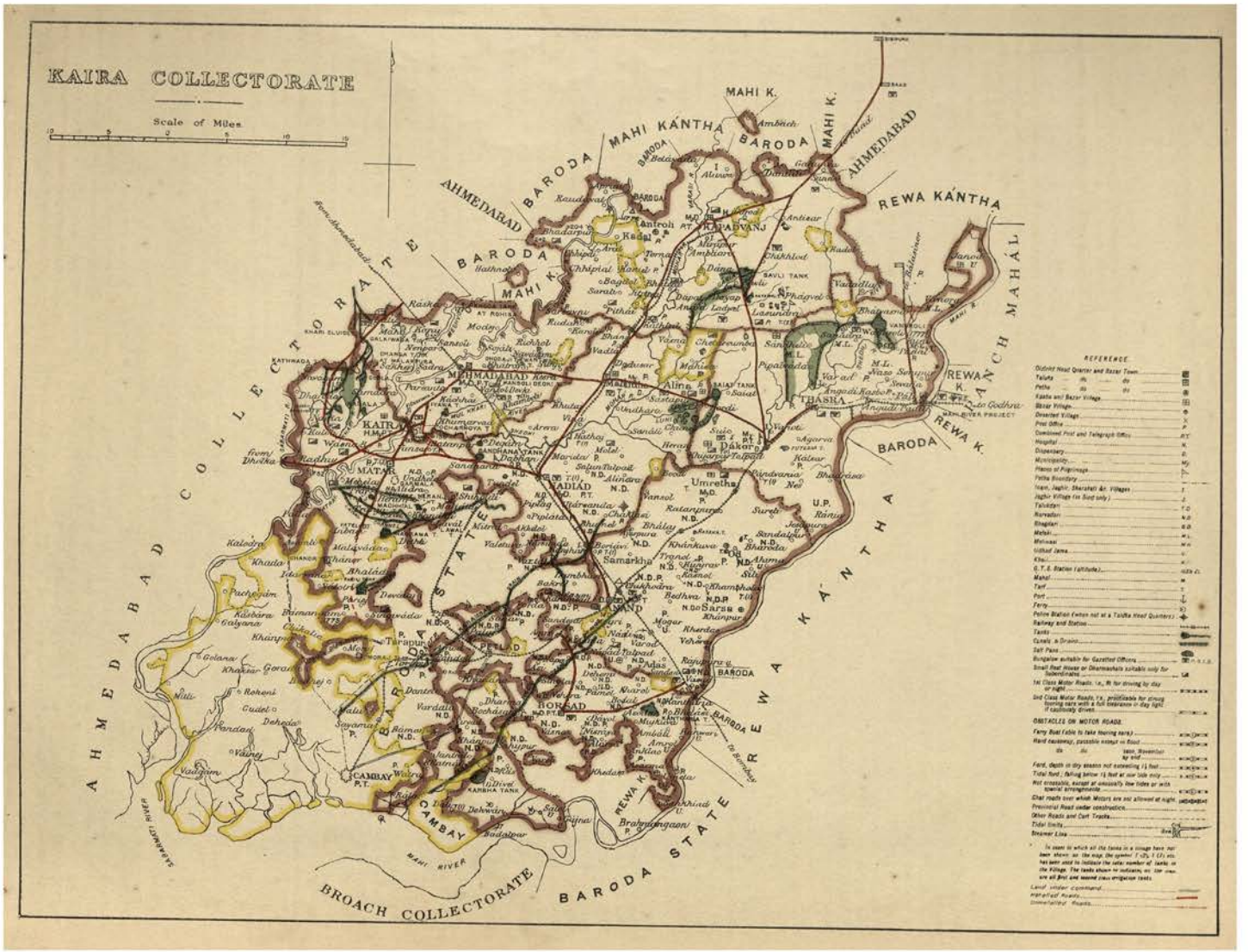
NUMBER OF CATTLE.

1909-10

1915-16

1919-20




KAIRA COLLECTORATE
Scale of Miles
AHMEDABAD COLLECTORATE
BARODA STATE
BROACH COLLECTORATE
BARODA STATE
REWA KÁNTHA
MAHI KÁNTHA
BARODA
AHMEDABAD
MAHI K.
REWA K.
KAIRA
MATAR
MEHMADABAD
KAPADVANJ
THASRA
Dákor
Umretha
Samarkha
ANAND
PETLAD
BORSAD
CAMBAY
MAHI RIVER
SABARMATI RIVER
REFERENCE

KAIRA

POSITION AND AREA

The district of Kaira lies between 22° 14′ and 23° 7′ north latitude and 72° 30′ and 73° 23′ east longitude and has an area of 1,608 square miles. It is bounded on the north by the Ahmedabad district, Mahi Kantha and the small State of Balasinor in the Rewa Kantha Agency; on the west by the Ahmedabad district and the State of Cambay; on the south and east by the river Mahi and the Gaikwar's territory. The breadth of the district varies from twenty-five to forty miles.

PHYSICAL FEATURES

Kaira is a lowland country situated between the rivers Sabarmati and Mahi which fall into the Gulf of Cambay. A broad belt of the Gaikwar's territory penetrates into the centre of the district which is otherwise compact. It consists of an almost unbroken plain. The land in the centre is a tract of the most fertile soil. Besides the two large rivers already mentioned the country is well-watered by several smaller rivers, but is subject to occasional damage from inundations. Embankments have been thrown across the Khari in the west near its junction with the Sabarmati and these serve to irrigate the rich rice lands of the neighbouring villages.

RAINFALL

From November to March the air is pleasant and bracing but the heat during the rest of the year is severe, dry and parching in March, April and May, moist and oppressive from June to October. The average temperature is 82° F., the maximum being 116° F. and the minimum 43° F. The average rainfall for the district is about thirty-four inches. But although it is so moderate, the district has always been liable to floods, especially in the two low-lying tracts, the one in Matar and the other, the southern lands of Nadiad, Petlad and the north of Borsad.

SOILS

The soils of the district which is one of the most fertile in the Presidency, are of four chief kinds, light or *gorat*, medium or *besar*, black or *kali*, and alluvial or *bhatha*. The light *gorat* is the prevailing soil, varying in quality from the loose-grained yellow sand of the fields near the Sabarmati and the Mahi to a rich light brown mould, common in the central talukas and found to perfection in the south-west corner of Matar. The richer variety is known as *goradu besar*. Under medium or *besar* come several soils, varying from heavy sands to light clays. Soils of this class are pretty generally distributed over the whole district, though nowhere over any large area. As a rule the black soil or *kali* is poor, and scarcely ever deep. Alluvial soil or *bhatha* is chiefly found near the Vatrak river.

CROPS

Bajri is the principal crop and the staple grain food. It occupies an area of nearly one and a half lakhs of acres and is grown in all the lighter soils with a mixture of *math*, *mug* and other pulses. *Jowar* is grown to a much less extent (occupying about forty to fifty thousand acres) but is important as fodder. Rice is comparatively a large crop and covers an area of about sixty thousand acres. The best rice is raised in the Khari villages of Matar where the black soil fields are embanked and mostly irrigated from the Khari Canal. In other parts rice of an inferior quality is, without watering, grown in low-lying lands of black or medium *besar* soil. Coarse grains, *kodra* and *bavto* are grown chiefly by the poorer cultivators and constitute with *bajri* their staple food. Wheat is not an extensive crop being cultivated only on about ten thousand acres. Tobacco is the most valuable article of produce in the district. In a normal year it occupies nearly thirty thousand acres, mostly in the *charotar* tract, the central part of the district. Castorseed and sesamum are the only oil-seeds grown and occupy about ten thousand acres each. The cultivation of cotton has considerably extended recently and the crop now occupies about seventy thousand acres and is one of the most valuable crops of the district. Garden cultivation is extensive.

CATTLE

The district is very important in connection with cattle. So far as the Bombay Presidency is concerned it (along with Ahmedabad) produces the best Kankreji cattle that we have. The main breeding localities are in the Thasra, Kapadvanj and Matar talukas. Throughout the greater part of the district the breed is essentially of the Kankreji type and the ordinary village cattle are distinctly above the general run of other parts; but in some localities other types chiefly from Kathiawar and Rajputana are seen. The total number of cattle which was 420,000 in 1915-16 was reduced to 378,000 apparently owing to the intense and widespread famine of 1918-19. Sheep and goats were, however, found to withstand the drought best, their number remaining almost the same (sixty-five thousand), after the famine. Of the total cattle, roughly one-third are milch cattle, one-fourth plough cattle and one-third young stock.

FORESTS

The district has no forests or forest lands, the trees either standing singly or in small groves. In the north the *mahura* (*Bassia latifolia*) and in the south the mango and *limbdo* or nim (*Melia Azadirachta*) are the commonest kinds. Mangoes are sent in considerable quantities to Baroda, Ahmedabad and Kathiawar. During the hot season the fleshy corolla of the *mahura* flower is eaten by the poorer classes and by cattle and from it is distilled a favourite liquor.

LIABILITY TO FAMINE

There was no serious famine between 1813 and 1899. At intervals the rainfall has been scanty and crops have partly failed, but never to such an extent as to cause famine or even general scarcity. Locusts, floods and caterpillars occasionally cause local distress.

The district cannot therefore be described as liable to recurring famines. There are tracts, however, where distress is felt sooner than elsewhere. Generally speaking, the area most liable to famine is the northern part of the district comprising (1) Matar, (2) Mehemdabad, (3) Kapadvanj and (4) Thasra Talukas and (5) a small part of the Nadiad taluka.

In Matar taluka rice is the principal crop and the deficiencies of rainfall which frequently occur injuriously affect that crop and through it the prosperity of the whole taluka. The soil of Mehemdabad is sandy and heavy rainfall which unfortunately does not always occur, is generally needed for the crops. These and the other two talukas also suffer by reason of their northerly situation so that any weakness of the monsoon current deprives them of the requisite amount of rain, as in such cases the current hardly reaches them effectively.

IRRIGATION

The only important irrigation works in the district are the Kharicut Canals (see Ahmedabad account), and the Wangroli, Tranza, Nagrama, Savli and Saiat Tanks.

The Wangroli tank is north of a village of the same name in Thasra taluka. It was constructed in the famine of 1901 by throwing an earthen bund across the Kharwa Nalla. The catchment area is about thirteen square miles. The tank is capable of supplying nearly two hundred million cubic feet of water for irrigation. The tank has two canals, viz., the Right Bank canal and the Left Bank canal. It has not proved remunerative but serves to protect the cultivation in bad seasons.

The Tranza Tank is situated within the limits of Tranza and Kathoda villages in the Matar taluka. It was constructed in the famine of 1901. The capacity of this tank is about eighty-three million cubic feet.

The Nagrama tank was also formed in 1901 by connecting the two village tanks of Nagrama and Marola in the Matar taluka. The capacity of this tank is about 115 million cubic feet. Both the Tranza and Nagrama Tanks have proved however, neither remunerative nor protective.

The Savli Tank situated near Savli village in Kapadvanj taluka was completed and brought into operation in 1908-09. The dam is constructed across the Gandia Nalla. The tank has two canals for irrigating the land under its command. The Right Bank canal and the Left Bank canal having respectively a length of about one and a half and six and a half miles. The tank is not remunerative. It does not fill in bad seasons, nevertheless it benefits the cultivators in times of irregular rainfall.

The Saiat Tank situated near the Saiat village in Thasra taluka was completed and brought into operation during the year 1910. The dam is constructed across the Saiat Nalla. The tank has two canals, viz., the Right and Left Bank canals for irrigating the lands under its command, with a length of roughly three and a half and four and a half miles respectively. Though the tank is not remunerative yet it has been useful to cultivators in times of irregular rainfall.

DRINKING WATER

The main sources of the drinking water supply in the district are wells. Owing to scanty rainfall during recent years, the level of the sub-soil water has gone down very low throughout the district. A large number of wells has accordingly gone out of use and the supply of drinking water for human beings and cattle is becoming a serious problem especially in years of scanty rainfall when the village tanks are empty.

INDUSTRIES

The district is mainly agricultural and there are no big industries. There are two cotton spinning and weaving Mills in Nadiad and fourteen cotton ginning factories in the district, which give employment to many labourers. There is however one noticeable industry in the district—the manufacture of case in which is made in the villages and exported by various agents and firms in Bombay. The industry is ruled by London and American prices and exposed to severe fluctuations largely dependent on the forward buying and selling of the agents in Bombay. There is an opportunity in this industry for improved production which the Department of Industries is trying to introduce.

TRADE

The chief exports are grain, tobacco, butter and *mahura* flowers; the chief imports are piece-goods, grocery and molasses.

MIGRATION

There is no appreciable emigration from the district. A few individuals go out every year to South and East Africa for business, etc. There is no immigration into the district.

COMMUNICATIONS

The district is intersected by three lines of railway, B. B. & C. I. main line, the B. B. & C. I. chord from Anand to Godhra, and the Nadiad-Kapadvanj railway; and is well served by a chain of roads which are within easy reach of all parts of the district.

RELIGION

The total population of the district 710,982 is composed of 620,080 Hindus, 65,215 Musalmans, 25,589 Christians, 94 Parsis and 4 persons of various other denominations.

LANGUAGES

Gujarati is the vernacular of the district and is spoken by 96·5 per cent. The only other important language is Hindi (Hindustani) used by 3·1 per cent. of the people mostly Musalmans.

BROAD OCCUPATIONS

According to main occupations 511,268 persons or 71·9 per cent. of the population are dependent for their livelihood on Agriculture. Industry including mines supports 68,776 persons or 9·7 per cent., Trade and Transport 31,421 persons or 4·4 per cent., the Professions and the Liberal Arts 18,585 persons or 2·6 per cent., while the remaining 80,932 persons or 11·4 per cent. depend for their livelihood on various other occupations.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district based on the census of 1921, mainly according to occupations but in a few cases according to castes, the figures include both workers and dependents.

Pasture and Agriculture.—Of the total population of 528,163 supported by pasture and agriculture, ordinary cultivators number 395,310, farm servants and field labourers 82,717, while 32,379 persons are dependent on income from rent of agricultural land. Raising of farm stock is an important occupation of this district and supports 16,506 persons. Of this, cattle and buffalo breeders and keepers number 7,803, sheep, goat and pig breeders 2,904, while herdsmen, shepherds and goat-herds number 5,711. Except in very bad seasons, the condition of all the classes is generally fair.

Industry.—Under this head may be mentioned the textile workers such as weavers and other workers in cotton, wool, silk, etc., at home and in factories. In the wood industry which supports 8,964 persons, the carpenters and joiners 5,786 and the basket makers and workers in bamboos, etc. 2,807 are the chief. The workers in iron 2,950 and workers in copper, brass, etc. 508 mainly constitute the metal industry which supports 3,574 persons. Potters number 5,977 and brick and tile makers 787. In the food industry rice-pounders and flour-grinders 1,121, manufacturers of vegetable oils 2,851, and butchers 785, deserve a mention. The building industry supporting 4,863 persons is mostly composed of brick-layers and masons 2,957 and stone-cutters and dressers 925. Under miscellaneous industries may be mentioned the tailors 2,407, shoe-makers 1,713, washermen 914 and barbers 6,773. It may be fairly correctly observed that almost all the classes engaged in industry get nowadays ample employment and decent wages and the condition of them is, therefore, on the whole fair.

Trade.—The trade in piece-goods and textiles supports 2,363 persons. In trade in foodstuffs (excluding hotels) which supports 15,518 persons, grain and pulse dealers 10,913 are by far the most numerous. Grocers and sellers of oil, salt, condiments and spices, etc. 2,850, and sellers of milk, ghee, poultry, etc. 504, are the other important ones of the class. The trade in fuel such as firewood, cowdung cake, etc., supports 301 persons. Traders as a class are secure from famine.

Professional Beggars.—These number 5,405. Most of them wander from place to place and earn enough for their livelihood. In times of famine, however, some of these may require relief.

Depressed Classes.—Under this head fall the Mahars, and Dheds 15,383, Bhangis 11,847 and Chambhars 11,058. The Bhangis are scavengers and Chambhars shoe-makers. Though many of them get enough work and wages, they cannot be called as quite secure and some will be in need of relief in times of great distress.

Brahmans (29,422).—They are mostly priests, Government and private servants and land holders. They are generally well off.

Musalmans (62,215).—These follow a variety of callings. The Bohras are the most well-to-do of this class and are generally traders. There are also some weavers and calico printers. Musalmans are mostly in a fair condition.

Christians (25,589).—These include a very large number of Indian Christians. They are largely agriculturists but a few find employment as clerks, etc. In a famine they are not likely to require State help.

Parsis number 94 and are quite well off.

ECONOMIC CONDITION

With regard to the general economic condition of the population it may be stated that the area composed of the Anand and Borsad talukas and the southern part of Nadiad taluka is a fertile region occupied by well-to-do cultivators, the *Patidars* among whom are the leading cultivators in all Gujarat. The economic condition of the inhabitants in the remaining parts of the district is on the whole good; but Matar taluka has of late suffered by a succession of bad seasons which have somewhat strained the resources of its inhabitants.

FORMER FAMINES

The rainfall table shows how completely the **1899** monsoon failed. The rain in June was fair but with the exception of a slight fall in September there was no more useful rain. Practically no irrigation was possible and the failure of both early and late crops was complete. The destruction of mango and other trees was most serious.

In **1900** the rains were late in the beginning. There was no rain in June and very little in July and after heavy rains in August the monsoon gradually closed. *Kharif* crops did not mature properly while the *rabi* suffered from deficiency of moisture throughout.

In **1901** the rains were again late and failed almost entirely from September onwards. A plague of locusts and rats, especially the latter, did great damage also to the surviving crops. The distress was much greater than in the preceding year.

In **1911-12** the rains were neither sufficient nor well distributed and the crops suffered in many places. The distress, however, was not so serious as to amount to a regular famine.

In **1918-19** the rains were far in defect of the average and in the absence of sufficient moisture the crops failed in vast areas and the distress was deep in many places. The opening of relief works, however, was not found necessary to any great extent. Grant of suspensions and remissions according to rules and a liberal grant of *tagai* for deepening wells, purchase of fodder, seed, etc., generally sufficed to meet the situation.

1920-21 was more a lean year than a famine year and no special famine measures were required.

FORECAST OF RELIEF WORKERS

Recent experience shows that since the great famine of 1900, the sustaining power of the *rayat* has increased and realising that every third or fourth year is likely to be a bad year, the people have learnt to lay by something in good seasons for the bad. These conclusions find support in the fact that no relief works were required during the year 1911-12; and in 1918-19 the maximum number of workers was only 2,129 during the month of May. The maximum number of persons who received gratuitous relief was 11,963 or 1·6 per cent. of the population in 1911-12 and 13,130 or 1·8 per cent. in 1918-19. The upper classes like the Banias, Brahmans and Bohras and the artisans generally are never in need of any relief even during the worst years, while to a large extent even the other classes manage to get on without it. The maximum number of people for whom relief employment is likely to be required in any year cannot, therefore, be put at more than twenty thousand persons or about three per cent. of the total population of the district.

KAIRA STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and Area of Villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Population (1921). Density per square mile.	Land Revenue.	Area for which Agricultural Statistics are available. Villages.	Area in Acres.	Percentage of previous column on the gross area.	Area Cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area Uncultivated. Available for Cultivation.	Not available for Cultivation. Forest.	Not available for Cultivation. Other.	Total.
								No.	No.	Rs.	No.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mehmedabad	57	166	3	6	60	172	66,016	386	2,31,756	57	106,900	96·7	3,286	76,152	9,337	88,775	2,686	..	15,439	18,125
2	Matar ..	75	215	2	1	77	216	56,036	259	2,74,359	75	125,540	88·9	2,766	79,714	13,113	95,593	9,242	..	20,705	29,947
3	Nadiad ..	92	214	7	10	99	224	138,915	620	4,02,512	95	141,227	98·5	5,843	113,368	3,967	123,198	965	..	17,064	18,029
4	Kapadvanj ..	77	269	6	9	83	278	82,415	295	1,86,787	77	171,892	96·0	3,375	122,959	10,906	137,240	3,069	..	31,583	34,652
5	Thasra ..	85	247	8	10	93	257	76,787	299	2,67,517	86	148,358	90·5	1,036	107,414	8,665	117,115	4,297	..	26,946	31,243
6	Anand ..	66	242	1	2	67	244	146,767	602	4,33,050	66	143,662	92·0	2,082	122,867	630	125,579	793	..	17,296	18,089
7	Borsad ..	72	201	1	4	73	205	144,046	703	3,87,340	72	104,358	77·2	7,543	87,170	447	95,160	131	..	9,062	9,193
	Total ..	524	1,554	28	42	552	1,596	710,982	445	21,83,321	528	941,937	91·5	25,956	709,644	47,065	782,665	21,183	..	138,089	159,272

Irrigation Abstract, 1922-23.

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other Cereals and Pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net Irrigated Area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mehmedabad	56	..	35	3,157	107	3,355	196	1,311	509	..	5	..	..	2	32	136	61	1,139	1,388	33
2	Matar ..	1,143	..	346	1,162	261	2,912	1,033	889	114	..	..	..	..	..	123	75	87	591	2,912	..
3	Nadiad ..	319	..	..	5,598	..	5,917	146	87	..	5	..	24	268	9	326	..	5,331	6,196	279	5,917
4	Kapadvanj ..	947	..	247	2,174	15	3,383	903	847	12	..	..	..	253	1	551	..	906	3,473	90	3,383
5	Thasra ..	923	..	8	100	5	1,036	738	145	..	7	..	4	293	..	25	..	72	1,287	251	1,036
6	Anand ..	..	..	..	2,019	73	2,092	1	12	..	1	..	6	3	6	312	..	1,828	2,174	82	2,092
7	Borsad ..	..	..	..	7,807	..	7,807	..	62	1	15	..	..	..	..	65	280	..	7,416	7,839	32
	Total ..	3,388	..	636	22,017	461	26,502	3,017	3,358	636	31	..	34	822	236	1,705	149	17,281	27,269	767	26,502

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and Area of Villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Population (1911). Density per square mile.	Land Revenue.	Area for which Agricultural Statistics are available. Villages.	Area in Acres.	Percentage of previous column on the gross area.	Area Cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area Uncultivated. Available for Cultivation.	Not available for Cultivation. Forest.	Not available for Cultivation. Other.	Total.
								No.	No.	Rs.	No.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mehmedabad	57	167	3	6	60	173	67,692	396	2,30,637	57	106,869	96·7	12,062	37,514	40,352	89,928	1,338	..	15,594	16,932
2	Matar ..	74	196	2	1	76	197	58,705	272	2,74,358	74	125,579	88·9	8,358	42,817	50,690	101,775	2,859	..	20,945	23,804
3	Nadiad ..	92	224	7	10	99	234	133,467	596	4,05,951	95	141,226	98·5	13,044	86,433	23,691	123,168	1,009	..	17,049	18,058
4	Kapadvanj ..	77	268	6	9	83	277	76,730	275	1,85,239	77	171,889	96·0	4,995	100,270	33,173	138,438	2,524	..	30,927	33,451
5	Thasra ..	85	225	8	10	93	235	71,588	279	2,62,648	86	148,360	90·5	1,660	96,300	19,907	117,867	3,633	..	26,860	30,493
6	Anand ..	66	224	1	2	67	226	143,468	588	4,33,667	66	143,659	92·0	5,546	111,296	8,732	125,574	855	..	17,230	18,085
7	Borsad ..	72	163	1	4	73	167	140,094	683	3,84,872	72	104,341	77·2	11,497	76,978	6,605	95,080	175	..	9,086	9,261
	Total ..	523	1,467	28	42	551	1,509	691,744	433	21,77,572	527	941,914	91·7	57,162	551,608	183,060	791,830	12,393	..	137,691	150,084

Irrigation Abstract, 1918-19.

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net Irrigated Area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mehmedabad	5	..	..	11,707	531	12,238	2	2,744	1,674	5,925	508	..	243	13	146	..	2,486	13,822	1,589	12,238
2	Matar ..	..	..	..	7,205	2,162	9,367	4	2,527	1,856	3,174	93	..	174	16	429	..	1,686	9,909	542	9,367
3	Nadiad ..	..	..	..	13,283	..	13,283	26	746	113	3,491	1,447	11	948	14	685	7	7,037	14,318	1,035	13,283
4	Kapadvanj ..	..	..	..	4,756	251	5,106	46	1,803	210	220	346	182	413	4	232	..	2,124	5,580	474	5,106
5	Thasra ..	..	..	..	1,009	..	1,677	299	131	5	1	116	116	105	..	252	..	784	1,809	132	1,677
6	Anand ..	..	..	..	5,772	83	5,855	8	134	..	922	576	3	501	19	246	..	4,712	7,121	1,266	5,855
7	Borsad ..	..	..	..	15,197	..	15,197	..	636	..	4,836	1,580	7	833	48	249	..	9,922	19,131	2,934	15,197
	Total ..	767	..	..	58,929	3,027	62,723	388	8,741	3,858	18,519	4,746	320	3,217	114	2,039	..	28,753	70,695	7,972	62,723

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Barley.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Math and Kulthi.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil-seeds. Sesamum.	Linseed.	Castor-seed.	Ground-nut.	Safflower-seed.	Niger-seed.	Others.	Total.	Fibres. Dyes.	Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder cropped.	Net area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mehmedabad	10,394	18,235	7,838	1,413	10,489	..	509	9,445	888	58,508	1,988	512	1,223	2,276	1,129	7,133	357	5,894	36	6,287	318	..	318	883	32	994	..	1,073	..	..	..	4	2,062	14	4,045	483	4,528	5,290	82,995	928	82,067
2	Matar ..	13,468	13,894	3,993	8,380	6,651	..	114	8,167	837	55,504	2,232	2,491	607	2,229	605	8,169	301	2,479	24	2,804	1,032	..	1,032	305	123	1,492	12	1,413	..	..	..	7	2,884	482	10,942	362	11,304	10,861	93,468	1,715	91,753
3	Nadiad ..	6,395	22,500	13,364	104	13,758	36	..	17,082	1,215	79,454	4,945	614	1,566	5,195	1,296	13,616	4,351	5,605	193	10,149	5,421	..	5,421	1,985	9	1,228	4	1,415	10	..	..	25	2,682	..	2,411	751	3,162	5,519	121,997	921	121,076
4	Kapadvanj ..	1,695	21,896	6,726	1,207	9,058	231	12	8,581	1,651	51,607	3,007	663	5,175	13,515	4,540	26,900	528	11,108	63	11,699	103	..	103	974	1	1,097	..	2,663	85	..	..	117	3,962	..	18,321	1,686	20,007	19,383	134,636	2,118	132,518
5	Thasra ..	702	17,031	16,260	228	12,933	150	..	12,053	3,358	62,715	3,278	2,146	1,407	1,844	1,319	9,996	791	5,850	7	6,648	1,638	..	1,638	149	..	931	..	2,063	31	..	..	..	3,025	4	21,998	608	22,606	16,482	123,263	1,582	121,681
6	Anand ..	4,646	33,038	10,341	17	8,291	27	..	25,949	169	82,471	7,504	281	1,627	4,554	1,413	15,379	2,091	7,036	70	9,197	8,868	..	8,868	1,256	6	1,416	..	1,119	115	..	..	1	2,651	..	6,264	969	7,233	8,060	135,101	749	134,352
7	Borsad ..	8,485	27,723	5,824	62	4,618	4	1	26,279	2,128	75,116	4,689	35	1,273	2,895	1,175	10,067	2,145	3,391	30	5,566	10,619	..	10,619	325	65	2,202	..	756	99	..	..	1	3,058	1	3,759	989	4,748	9,325	118,886	601	118,287
	Total ..	45,782	159,310	64,396	11,411	65,798	948	636	107,556	9,538	465,375	27,640	6,747	12,886	32,508	11,477	91,260	10,564	39,363	423	50,350	27,999	..	27,999	5,857	236	9,310	16	10,502	341	..	..	155	20,324	501	67,740	5,848	73,588	74,850	810,348	8,614	801,734

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Barley.	Ragi.	Maize.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Math and Kulthi.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil-seeds. Sesamum.	Linseed.	Castor-seed.	Ground-nut.	Safflower seed.	Niger-seed.	Others.	Total.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Net Area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mehmedabad	7,865	22,868	32	2,744	1,674	228	1	9,404	253	39,069	204	..	69	..	65	338	375	2,416	..	2,791	113	..	113	196	13	210	..	287	1	..	..	..	998	..	7,515	39	7,554	2,360	53,432	3,091	50,341
2	Matar ..	9,780	14,661	206	3,194	1,856	175	1	1,851	174	30,898	151	263	41	28	483	787	1,591	1,878	97	97	136	16	319	3	670	..	..	..	..	..	..	..	992	12	17,621	9	17,630	4,935	57,077	2,116	54,961
3	Nadiad ..	12,969	51,649	287	746	113	837	13	9,700	973	77,287	1,032	..	396	..	311	1,739	2,007	4,047	..	6,054	2,905	..	2,905	962	14	489	..	1,530	8	..	..	..	2,023	..	9,201	236	9,437	5,288	105,713	4,896	100,817
4	Kapadvanj ..	1,799	34,637	304	1,803	210	163	402	2,812	412	42,542	525	..	2,104	..	2,084	4,763	13,713	5,396	..	19,109	28	..	28	172	4	595	..	4,489	313	..	..	..	5,397	..	27,493	713	28,206	13,661	133,852	3,078	130,804
5	Thasra ..	824	37,272	1,163	133	5	670	390	6,646	35	47,088	899	331	278	..	804	2,812	1,279	4,095	5	5,374	623	85	..	623	85	..	..	354	..	2,001	1	..	..	..	2,356	..	37,143	231	37,374	15,639	111,351	672	110,679
6	Anand ..	12,570	57,749	2,536	134	..	770	15	19,149	517	93,440	2,024	..	454	..	479	2,957	2,473	6,871	..	9,344	3,488	..	3,488	795	19	670	..	523	19	..	..	..	1,412	..	8,345	333	8,678	8,507	128,640	3,077	125,563
7	Borsad ..	15,616	31,456	3,662	656	..	2,523	10	25,835	1,684	81,442	2,478	..	598	Separate figures not available.	429	3,505	2,024	5,060	..	7,084	7,370	..	7,370	492	48	807	..	277	24	..	..	..	1,108	..	5,664	631	6,295	7,172	114,516	5,123	109,344
	Total ..	60,423	250,292	8,190	9,410	3,858	5,316	832	69,397	4,048	411,766	7,363	594	4,440	..	4,200	16,597	22,158	29,476	..	51,634	14,624	..	14,624	2,838	114	3,644	3	10,277	366	..	..	..	14,290	12	112,982	2,192	115,174	57,562	684,611	22,102	662,509

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-Calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Mehmedabad	11,578	38	16	51	122	1	3,002	9,342	3,666	8,564	36,565	149	1,494	6,482	6,223	22	213	2,320	17·6
2	Matar ..	10,233	5	35	77	84	2	4,064	9,244	3,560	7,424	34,745	209	3,093	5,317	5,659	16	252	2,174	19·6
3	Nadiad ..	15,694	11	17	130	170	4	2,907	18,650	5,623	16,991	59,797	223	3,234	10,062	9,248	45	341	4,308	14·0
4	Kapadvanj ..	17,027	2	42	92	166	..	7,544	12,129	11,878	10,475	59,349	460	971	8,237	8,964	1	130	2,900	17·3
5	Thasra ..	17,592	..	62	93	155	4	8,888	9,924	11,687	9,620	57,950	437	1,951	7,844	9,524	1	176	2,767	30·0
6	Anand ..	16,265	..	18	116	188	..	1,921	22,811	6,858	17,323	65,503	144	420	6,350	9,686	..	333	5,035	8·1
7	Borsad ..	14,486	10	18	100	90	7	1,619	23,105	5,666	19,237	64,328	279	2,082	5,987	8,243	..	360	4,588	13·2
	Total ..	102,880	63	213	659	981	18	29,487	105,196	49,108	89,632	378,237	1,903	14,045	50,279	57,465	85	1,805	24,092	16·2

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-Calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Mehmedabad	11,388	43,731	168	917	7,210	6,529	2	249	2,284	13·0
2	Matar ..	10,376	41,625	145	1,554	13,547	7,377	10	255	2,174	14·6
3	Nadiad ..	10,353	59,564	158	1,039	10,353	9,564	1	324	4,263	13·3
4	Kapadvanj ..	11,931	65,939	352	1,122	10,224	8,944	..	116	2,622	11·2
5	Thasra ..	14,496	61,663	348	2,361	1,061	8,925	..	141	2,611	8·9
6	Anand ..	19,275	69,827	156	482	7,519	9,992	..	316	3,813	14·4
7	Borsad ..	15,340	73,021	253	1,452	7,115	8,393	..	409	4,508	12·6
	Total ..	104,159	419,723	1,582	8,927	57,229	57,684	13	1,807	22,275	14·1

KAIRA STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For irrigation.	Government Canals. For drinking.	Government Canals. For Cattle and Washing.	Private Canals. For irrigation.	Private Canals. For drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kachha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For drinking.	Wells in use. For Cattle and Washing.	Tanks. For irrigation.	Tanks. For drinking.	Tanks. For Cattle and Washing.	Other Sources. For irrigation.	Other Sources. For drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Mehmedabad	1	..	..	..	..	..	142	1,876	2,018	215	81	185	2	263	78	1	3
2	Matar	..	..	..	..	..	..	257	1,040	1,297	248	40	261	10	216	88	24	17
3	Nadiad	3	..	..	..	..	..	645	2,122	2,767	598	63	303	7	646	14	..	2
4	Kapadvanj	2	..	..	..	..	..	151	1,452	1,603	414	24	118	..	410	20	8	13
5	Thasra	8	..	..	..	..	..	44	609	653	321	127	273	5	454	3	2	..
6	Anand	..	..	..	..	..	..	115	1,400	1,515	486	114	42	..	782	..	..	..
7	Borsad	..	..	..	..	..	..	103	2,326	2,429	394	67	13	..	721	..	..	..
	Total	14	..	..	..	..	..	1,457	10,825	12,282	2,676	516	1,195	24	3,492	203	35	35

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Wangroli Tank ..	5,000	5,000	3,000	3,400	753	288	1,041
2	Tranza Nagrana Tanks.	1,500	1,290	800	800	....	....	....
3	Savli Tank ..	4,700	4,700	3,000	3,000	896	593	1,489
4	Saist Tank ..	4,000	4,000	2,000	2,000	235	497	732
	Total ..	15,200	14,990	8,800	9,200	1,884	1,378	3,262

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total No.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Mehmedabad ..	14,488	4,320	268	31	3	19,110	84,017	4·4	15 1 2	3 3 4
2	Matar ..	14,869	4,059	364	22	5	19,319	89,560	4·6	18 7 9	3 9 6
3	Nadiad ..	28,424	5,316	362	26	..	34,128	114,052	3·3	17 4 4	4 14 9
4	Kapadvanj ..	12,241	6,042	381	37	12	18,713	129,239	6·9	11 10 4	1 9 4
5	Thasra ..	11,730	4,738	336	37	8	16,841	99,562	5·9	17 14 4	2 10 0
6	Anand ..	19,846	5,301	580	45	3	25,775	120,915	4·7	22 12 7	4 10 10
7	Borsad ..	19,740	3,916	432	29	..	24,117	92,639	3·8	21 3 9	5 6 5
	Total ..	121,338	33,684	2,723	227	31	158,003	729,984	4·9	17 15 3	3 10 5

Incidence of Assessment, 1920-21.

No.	Name of Village.	Fully assessed Area. Area.	Assessed.	Incidence per Acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per Head of population including Alienations.
		Acres.	Rupees.	Rs. a. p.	No.	Rs. a. p.
1	Mehmedabad ..	56,737	1,80,198	3 2 10	64,782	4 7 1
2	Matar ..	52,759	1,82,221	3 7 3	51,914	6 15 7
3	Nadiad ..	54,195	2,55,305	4 14 4	133,321	4 6 8
4	Kapadvanj ..	98,765	1,45,505	1 7 4	79,836	2 11 11
5	Thasra ..	91,189	2,24,001	2 7 3	61,667	4 14 4
6	Anand ..	63,673	3,04,697	4 12 6	134,249	4 6 0
7	Borsad ..	50,561	2,77,213	5 7 8	115,934	4 6 8
	Total ..	467,879	15,69,141	3 6 1	641,703	4 7 4

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Wangroli Tank ..	5,000	5,000	3,000	3,400	784	..	784
2	Tranza Nagrana Tanks..	1,500	1,290	800	800	..	..	..
3	Savli Tank ..	4,700	4,700	3,000	3,000	281	..	281
4	Saist Tank ..	4,000	4,000	2,000	2,000	107	..	107
	Total ..	15,200	14,990	8,800	9,200	1,172	..	1,172

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Kaira ..	Maximum 1917 ..	..	0·20	..	0·85	5·99	4·74	15·71	7·34	16·10	10·55	..	..	61·47
		Minimum 1899 ..	..	..	..	0·15	3·91	6·20	6·20	0·34	1·65	..	..	..	6·05
		Average ..	0·05	0·09	0·06	0·05	0·35	4·30	10·22	8·18	4·80	0·68	0·22	0·02	32·85
		Rainfall for 1922-23 ..	..	0·14	..	0·12	..	1·44	9·26	1·44	8·95	..	..	..	22·35
2	Mehmedabad ..	Maximum 1917 ..	..	0·75	..	1·00	7·30	5·02	12·69	8·79	16·82	13·58	..	..	65·95
		Minimum 1918 ..	..	..	..	..	..	0·45	0·59	2·63	0·15	..	..	..	3·82
		Average ..	0·04	0·11	0·06	0·06	0·49	4·34	12·10	8·36	4·47	0·90	0·24	0·02	31·19
		Rainfall for 1922-23 ..	..	0·26	..	0·20	0·25	2·71	9·91	1·72	11·80	..	0·07	..	26·92
3	Matar ..	Maximum 1892 ..	..	0·02	..	..	..	4·57	17·99	12·04	20·24	0·76	..	..	60·62
		Minimum 1918 ..	..	..	..	..	0·02	0·57	1·35	2·52	0·10	..	..	..	4·86
		Average ..	0·03	0·09	0·06	0·01	0·29	3·99	11·47	7·69	4·65	0·57	0·24	..	28·49
		Rainfall for 1922-23 ..	..	0·10	..	..	..	1·52	10·34	1·36	9·07	..	..	..	22·39
4	Nadiad ..	Maximum 1917 ..	..	0·37	..	0·34	3·81	5·56	17·23	11·27	14·59	10·77	..	..	63·94
		Minimum 1918 ..	..	..	..	0·01	0·71	2·03	2·32	1·78	0·78	..	..	..	7·33
		Average ..	0·04	0·08	0·06	0·02	0·22	4·48	13·71	9·26	4·75	0·70	0·24	0·03	33·59
		Rainfall for 1922-23 ..	..	0·14	..	0·02	0·42	1·15	9·78	2·60	8·42	..	..	..	22·66
5	Mahudha D. ..	Maximum 1877 ..	..	0·23	0·51	0·02	..	3·61	10·75	10·78	6·60	6·39	..	..	69·89
		Minimum 1918 ..	..	..	..	..	0·04	0·58	0·76	3·97	0·67	..	0·05	..	6·07
		Average ..	0·04	0·12	0·09	0·02	0·14	4·68	11·90	9·37	4·37	0·81	0·19	0·01	31·36
		Rainfall for 1922-23 ..	..	0·08	..	0·04	0·04	0·76	14·32	1·94	13·56	..	..	..	30·84
6	Kapadvanj ..	Maximum 1917 ..	..	0·20	..	0·41	6·80	3·01	10·67	11·43	12·40	8·87	..	..	53·79
		Minimum 1899 ..	..	..	..	..	0·70	4·15	1·10	..	9·28	..	..	..	6·23
		Average ..	0·03	0·08	0·05	0·02	0·44	4·68	11·08	8·67	11·78	6·23	0·20	0·01	33·06
		Rainfall for 1922-23 ..	..	..	..	..	0·04	3·14	10·39	1·77	6·20	..	..	..	21·87
7	Thasra ..	Maximum 1894 ..	..	..	..	..	0·30	9·15	28·49	5·20	14·17	2·17	..	..	57·51
		Minimum 1899 ..	..	..	..	..	..	2·84	0·94	..	9·36	..	..	0·10	4·24
		Average ..	0·04	0·09	0·11	0·06	0·33	4·84	11·85	8·97	3·95	0·63	0·11	0·02	31·00
		Rainfall for 1922-23 ..	..	0·18	..	0·98	0·47	2·52	11·18	2·82	12·51	0·68	0·02	..	31·36
8	Dakor D. ..	Maximum 1894 ..	..	..	..	..	14·27	26·40	2·42	10·74	3·04	..	..	..	56·87
		Minimum 1899 ..	..	..	..	..	0·20	4·09	1·48	0·50	0·18	..	..	0·10	6·55
		Average ..	0·05	0·08	0·12	0·03	0·32	4·95	12·70	3·92	1·86	0·89	0·17	0·04	32·13
		Rainfall for 1922-23 ..	..	0·25	..	0·75	..	1·77	13·41	2·69	10·88	0·15	..	..	29·90
9	Anand ..	Maximum 1917 ..	..	0·02	..	0·30	4·19	5·75	15·36	10·13	14·31	11·15	..	..	61·21
		Minimum 1918 ..	..	..	..	..	..	1·22	1·42	4·23	0·57	..	..	..	7·94
		Average ..	0·08	0·06	0·04	0·04	0·25	4·47	14·22	8·97	4·98	0·27	0·17	0·04	34·09
		Rainfall for 1922-23 ..	..	0·13	..	0·50	0·08	3·10	14·27	3·23	9·14	0·04	..	..	30·99
10	Borsad ..	Maximum 1917 ..	..	..	..	0·55	3·94	13·02	17·59	8·80	18·80	9·25	..	..	72·45
		Minimum 1899 ..	..	0·11	..	..	0·42	2·79	0·12	0·07	2·69	..	..	..	6·14
		Average ..	0·06	0·10	..	0·06	0·30	5·02	12·96	8·82	5·06	0·98	0·13	0·02	33·62
		Rainfall for 1922-23 ..	..	0·31	..	0·17	..	4·71	9·58	2·99	9·94	..	..	..	27·70

Temperature Details (Kaira).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean Maximum ..	86	89	97	102	102	98	88	86	87	91	86	79
	,, Minimum ..	56	62	66	76	85	82	80	81	80	77	66	61
	Absolute Maximum ..	88	93	93	110	106	109	92	88	93	94	91	84
	,, Minimum ..	53	57	62	69	82	73	75	77	78	70	61	55
1914	Mean Maximum ..	79	82	90	99	105	98	86	89	93	101	96	86
	,, Minimum ..	64	65	68	80	85	80	80	80	80	86	73	63
	Absolute Maximum ..	81	85	98	104	113	105	97	92	100	104	103	93
	,, Minimum ..	59	54	64	75	83	79	78	78	77	71	68	56
1915	Mean Maximum ..	85	88	97	104	106	104	97	93	101	98	98	92
	,, Minimum ..	63	64	68	81	85	84	85	83	80	74	67	67
	Absolute Maximum ..	94	95	105	113	114	110	104	98	105	105	103	98
	,, Minimum ..	57	58	63	75	83	83	80	80	79	75	70	63
1916	Mean Maximum ..	93	88	104	105	105	100	95	89	96	97	94	90
	,, Minimum ..	66	65	78	83	86	85	84	80	80	78	68	62
	Absolute Maximum ..	100	98	109	109	116	105	102	95	98	101	99	95
	,, Minimum ..	61	51	70	79	82	78	81	78	77	65	64	57
1917	Mean Maximum ..	86	87	93	96	95	94	88	87	88	90	88	86
	,, Minimum ..	59	61	65	73	71	76	73	73	73	69	57	56
	Absolute Maximum ..	95	94	100	106	101	103	94	90	96	94	90	92
	,, Minimum ..	48	54	57	67	66	72	70	70	65	62	53	51
1918	Mean Maximum ..	84	91	92	101	103	99	94	91	94	104	99	88
	,, Minimum ..	54	58	65	69	77	76	74	76	72	70	68	62
	Absolute Maximum ..	93	102	104	108	108	101	98	97	100	106	104	92
	,, Minimum ..	48	49	54	63	73	72	72	69	70	64	62	56
1919	Mean Maximum ..	90	89	95	104	106	98	91	85	93	98	93	87
	,, Minimum ..	59	63	71	78	84	80	79	80	78	72	63	63
	Absolute Maximum ..	95	94	102	108	110	106	100	90	104	102	102	92
	,, Minimum ..	51	53	64	74	78	74	78	75	77	72	66	58
1920	Mean Maximum ..	87	94	98	104	100	94	87	87	96	102	93	93
	,, Minimum ..	65	63	71	78	79	80	78	76	78	76	70	60
	Absolute Maximum ..	92	104	106	108	112	109	96	95	103	108	108	96
	,, Minimum ..	58	46	64	69	74	76	73	74	75	70	60	50
1921	Mean Maximum ..	88	92	102	107	106	100	93	87	86	95	92	89
	,, Minimum ..	59	60	70	77	82	83	81	77	77	73	66	62
	Absolute Maximum ..	95	102	108	110	114	105	102	92	92	98	95	92
	,, Minimum ..	52	54	64	70	80	80	76	76	74	68	62	56
1922	Mean Maximum ..	85	92	99	102	104	97	89	87	87	96	92	86
	,, Minimum ..	57	64	72	79	82	82	79	77	77	80	67	59
	Absolute Maximum ..	91	97	104	110	110	104	98	96	98	104	98	94
	,, Minimum ..	48	54	62	70	76	80	76	76	74	70	56	52

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per Rupee. Bajri.	Rice.	Ragi.	Tur-Dal.	Jowari-Kodhi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Mehmedabad ..	24	16	30	19	46	142	0 12 0	0 3 6	0 3 10
	Non-Headquarter towns.									
2	Matar ..	22	16	29	19	60	..	0 9 2	0 3 4	0 4 0
3	Nadiad ..	23	16	31	19	85	66	0 12 0	0 3 7	0 4 9
4	Kapadvanj ..	24	17	30	18	50	142	0 13 5	0 4 2	0 5 2
5	Thasra ..	23	16	29	17	98	84	0 12 7	0 4 5	0 4 5
6	Anand ..	22	17	28	19	45	..	0 12 0	0 4 4	0 3 9
7	Borsad ..	22	18	30	20	98	..	0 13 0	0 4 4	0 4 4
	Average of the non-headquarter towns	23	17	29	19	73	97	0 12 0	0 3 11	0 4 5

Prices, 1922-23.

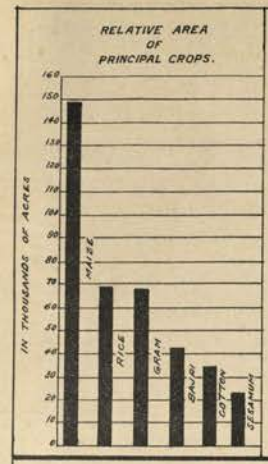
No.	Taluka.	Price in lbs. per Rupee. Bajri.	Rice.	Ragi.	Tur-Dal.	Jowari-Kodhi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Mehmedabad ..	18	10	24	12	32	..	1 7 6	0 9 0	0 8 0
	Non-Headquarter towns.									
2	Matar ..	18	10	24	11	44	..	2 8 0	0 8 0	0 8 4
3	Nadiad ..	17	10	23	12	..	..	2 5 2	0 11 7	0 11 7
4	Kapadvanj ..	17	10	25	11	39	142	2 0 0	0 8 0	0 8 0
5	Thasra ..	18	11	23	10	32	98	1 12 0	0 8 4	0 6 10
6	Anand ..	17	11	22	13	26	..	2 0 0	0 12 0	0 12 0
7	Borsad ..	17	11	24	13	42	..	2 8 0	0 9 6	0 8 0
	Average for the period ..	17	10	23	12	37	120	2 2 10	0 9 7	0 9 1

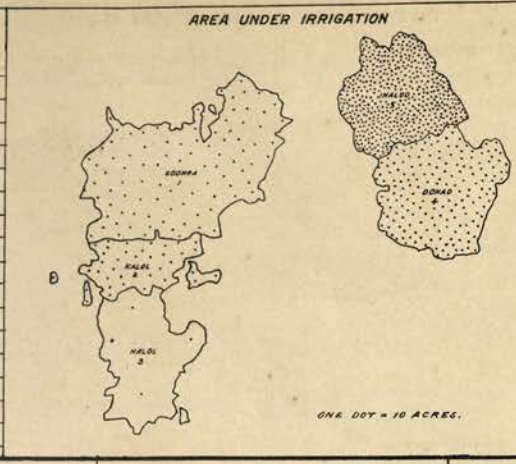
Famine Relief—Average Daily Number.

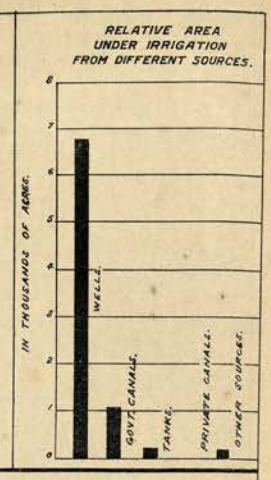
Month.	1911-12. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
November ..								No.	No.	No.	Lbs.	Lbs.						
December ..								..	..	339	338	11	7					
January ..								..	..	2,249	2,049	11	7					
February ..	No Relief	Works	were	opened.				2	..	4,659	4,659	10	7	No Relief	Works	were opened.		
March ..								431	..	7,999	7,901	9	7					
April ..								1,402	..	10,339	10,270	9	8					
May ..								2,129	..	11,569	12,971	9	8					
June ..								1,055	..	13,130	13,259	9	8					
July ..								207	..	12,857	13,912	9	8					
August ..								..	..	9,483	9,690	8	8					
										2,233	2,233	10						
Average for the period ..								522		7,455	7,977	9	8					

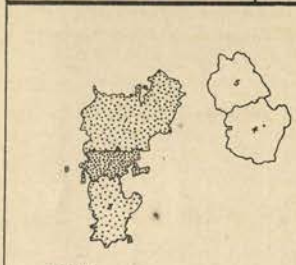
PANCH MAHAL DISTRICT

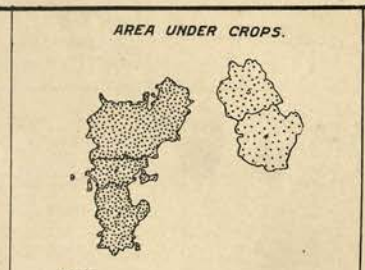
PANCH-MAHALS DISTRICT.

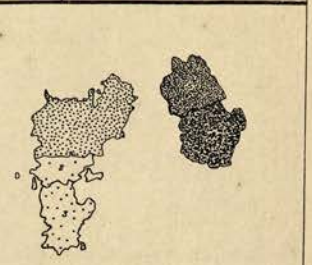


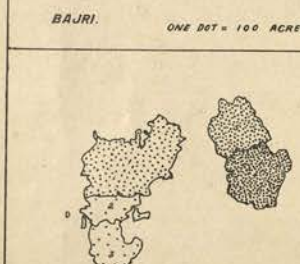


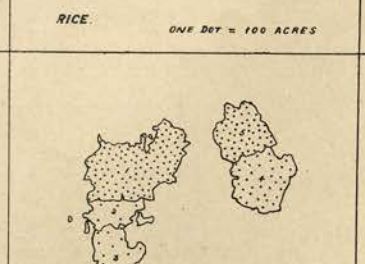


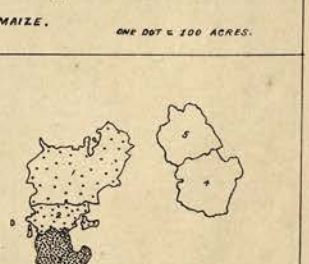


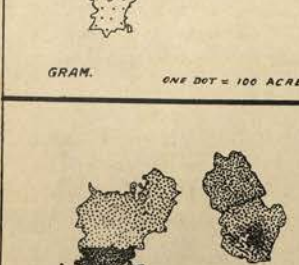


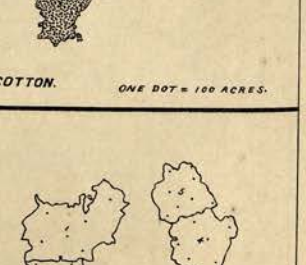








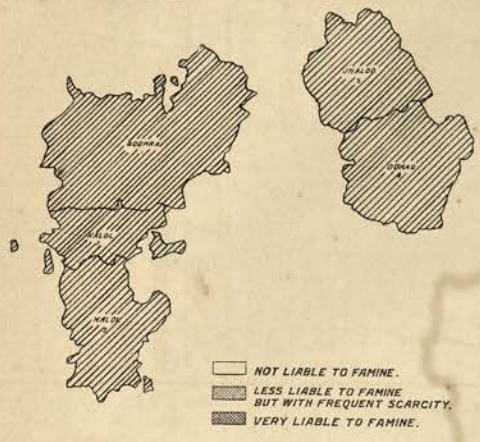




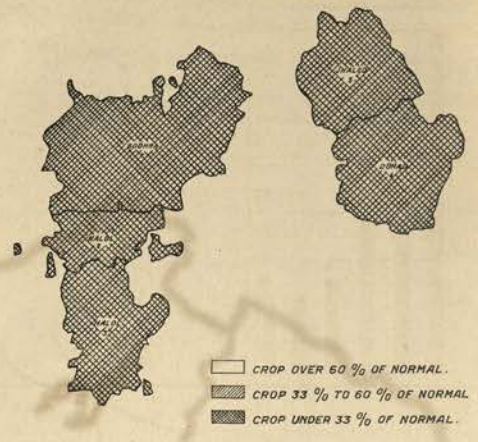
PANCH-MAHALS DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

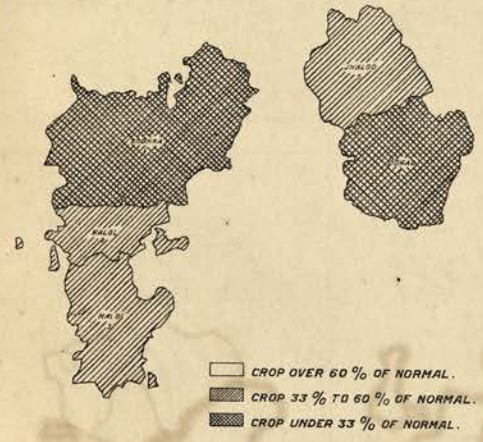
GENERAL LIABILITY TO FAMINE.



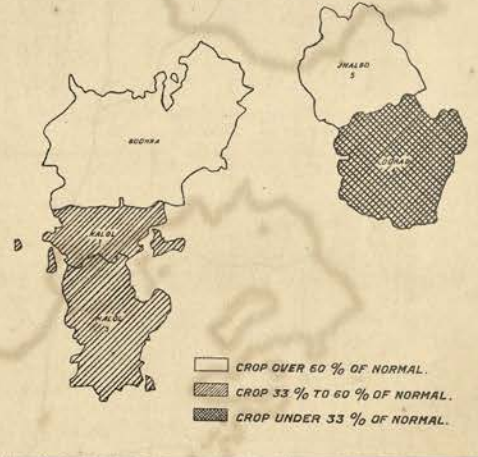
INTENSITY OF FAMINE IN 1911-12.



INTENSITY OF FAMINE IN 1918-19.



INTENSITY OF FAMINE IN 1920-21.

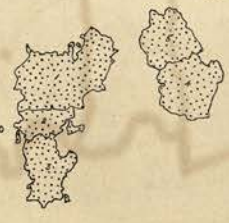


NUMBER OF CATTLE.

1909-10

ONE DOT = 1000 CATTLE.

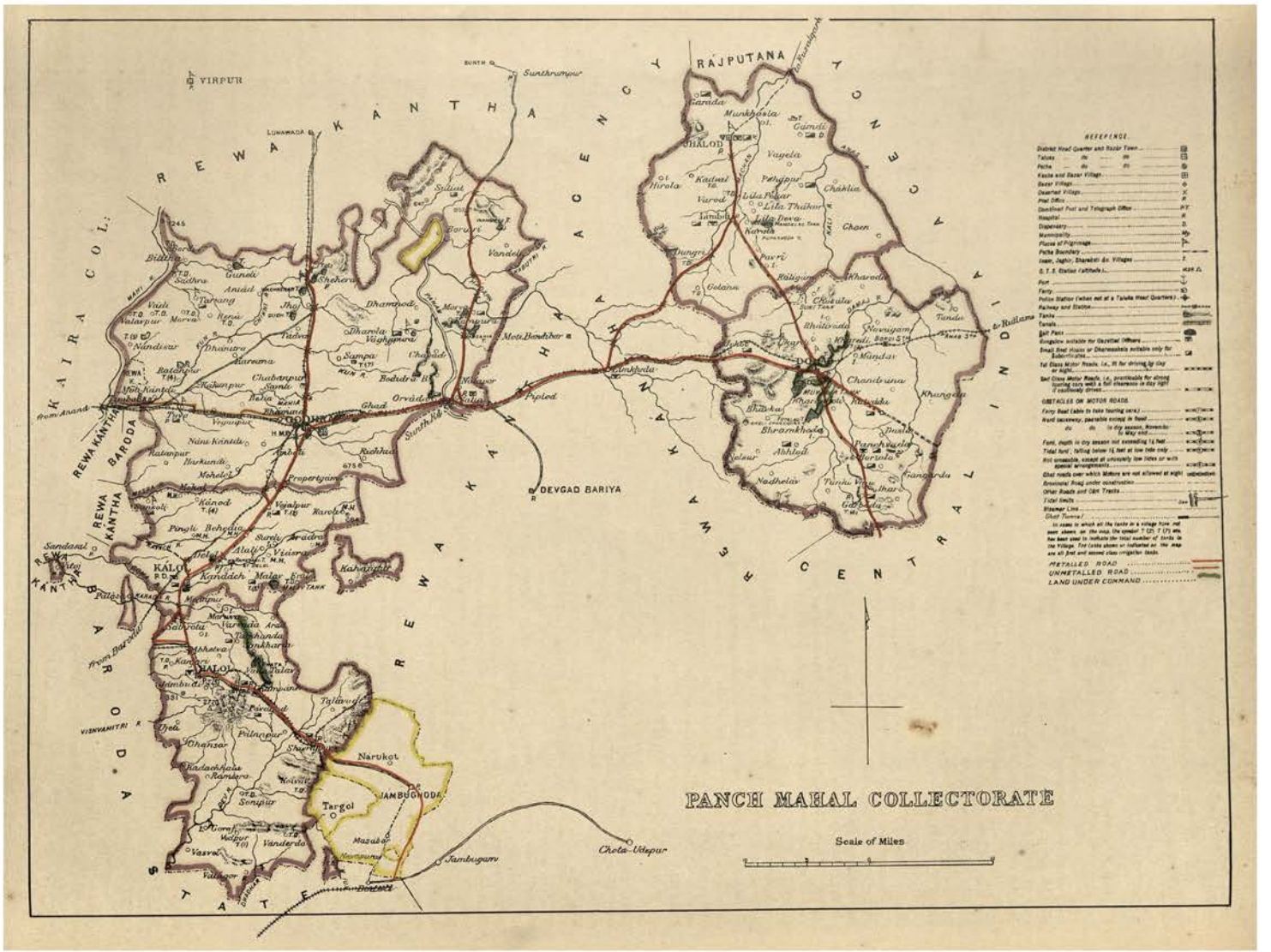
1915-16



ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


PANCH MAHAL COLLECTORATE
Scale of Miles
REWA KANTHA
KAIRA COL:
BARODA STATE
CENTRAL INDIA AGENCY
RAJPUTANA
VIRPUR
LUNAWADA
SUNTH
Sunthrampur
GODHRA
KALOL
HALOL
DEVGAD BARIYA
JHALOD
DOHAD
JAMBUGHODA
Narukot
Targol
Jambugam
Chota-Udepur
from Anand
from Baroda
to Ratlam
to Kusalgarh
REFERENCE
METALLED ROAD
UNMETALLED ROAD
LAND UNDER COMMAND

PANCH MAHALS

POSITION AND AREA

The district of Panch Mahals lies between 22° 15′ and 23° 11′ north latitude and 73° 22′ and 74° 29′ east longitude and covers an area of 1,608 square miles. It consists of two separate parts, divided by a broad strip of the Baria State of the Rewa Kantha Agency. Of these, the western portion is bounded on the north by the States of Lunavada, Sunth and Sanjeli ; on the east by Bariya State ; on the south by Baroda State ; and on the west by the Baroda State, the Pandu Mehwas and the Mahi river which separates it from the Kaira district. The eastern portion is bounded on the north by the States of Chilkari and Kushalgarh ; on the east by Western Malwa and the river Anas ; on the south by Western Malwa ; and on the west by the States of Sunth, Sanjeli and Bariya.

PHYSICAL FEATURES

The western country is for the most part flat, but the eastern division is more or less rugged. The western division is well wooded, the eastern bare.

Though there are many streams and water courses, the district has no large river, except the Mahi, which touches it on the north-west. The Anas and Panam occasionally dry up in the hot season.

Pavagarh in the south-west corner of the district is the only mountain of any size. It rises 2,500 feet from the plain in almost sheer precipices, and has a rugged and picturesque outline on the summit.

CLIMATE

In healthiness the climate varies greatly. The well-tilled parts, Kalol in the west and Dohad in the east, would seem to be free from any special form of sickness, and to be healthy for new comer as well as for the local population. Godhra surrounded by large areas of forests and waste, though fairly healthy for residents is a trying climate for strangers. The hot and rainy seasons have a depressing effect on some people. The mean temperature is 83°F.

RAINFALL

The rainfall, due to the hills of Rajpipla, is heavier than in other Gujarat districts. It is most copious in the western portion, where the fall ranges from thirty-eight inches in the north to forty-four inches in the south. In the eastern talukas the fall is about thirty inches. July and August are the wettest months and there is usually little or no rain after September.

SOIL

There are many varieties of soil found in the district. In the north-west of Godhra, near the Mahi, is some alluvial or *bhatha* land ; south of this is a belt of dull black *mal*, such as is found in Thasra in the Kaira district ; and beyond that is a very large tract of light or *goradu* land. To the north and north-east of Godhra a rich medium black or *besar* bears heavy crops of wheat and gram. Kalol taluka is almost entirely *goradu* or light soil, but in a few villages a medium black clay is found which is well suited to rice and coarse grains like *Kodra*. In the south of Halol are stretches of rich black soil. In the eastern division the soil, both light and black, is of very high quality.

CROPS

Maize is the staple food of the district and is grown as the first monsoon crop. *Bajri* and rice are also largely cultivated, but the latter is of an inferior quality. Sesame is sown for the most part in the partially cleared or new lands, and there is always a considerable area under *bavto*, *kodra* and other inferior grains. The late crops are wheat and gram and these generally follow as second crops. The cultivation of tobacco and cotton is steadily increasing. The *mhowra* tree is common and its flower and fruit are extensively consumed and exported.

Normally, maize occupies about one and a half lakhs of acres, rice about seventy thousand acres, *bajri* about forty thousand acres and wheat and *ragi* nearly twenty thousand acres each. Among pulses gram is by far the most important covering nearly seventy thousand acres. *Tur* has about ten thousand acres under it. Among oil-seeds the most important are sesame and groundnut occupying twenty and fifteen thousand acres respectively. Tobacco is grown to the extent of a thousand acres. Cotton which occupies about thirty to forty thousand acres is exclusively confined to the west where again Halol alone occupies four-fifths of the total area.

CATTLE

On the western side the breed of cattle is mainly of the Gujarat type, but inferior to the breed in the Ahmedabad and Kaira districts and containing a good deal of Malwi blood. On the eastern side most of the cattle are degenerate Malwis. There is fair grazing in most parts and to the east the grazing grounds are very extensive and fodder of fair quality is abundant in an ordinary year. There are very few professional breeders (Rabaris), but the cultivators keep a large number of inferior cattle which are bred under natural conditions. Most cultivators keep five or six cows and many have fifty or more, indeed amongst the Bhils a man's wealth consists of his cattle.

FORESTS

There are about 331 square miles of forest in the district of which 328 square miles are forest proper and three square miles of pasture reserve. The forests are essentially pole forests, *i.e.*, they do not supply much timber of big scantling. The proportion of teak among the poles is high and this together with the easy nature of the district for cart traffic and the fairly extensive railway system make the main produce, poles and fuel, easy to dispose of so that the *coupes* fetch good prices. Besides timber and fuel the main items of produce are grass (including grazing), *timru* leaves, *tarwad* bark, stones and lime, *mhowra* flowers, bamboos, thorns and palm leaves. The forests are now being worked on a rotation of thirty years, *i.e.*, one-thirtieth part of the area is clear felled yearly, the felling area being distributed into a large number of *coupes* which are bought standing by contractors. The new crop is obtained partly from the coppice shoots of the felled trees and partly by sowing and planting done by the Forest Department. Grazing is free for the cultivators of forest villages and for others at moderate fees.

IRRIGATION

The only irrigation works of any importance are the Futelao and Muwalia Tanks. The first of these is situated about three miles south of Dohad town. The tank was brought into operation in 1917-18. The catchment area of the tank is seven square miles mostly covered with hills. The capacity of the tank is over fifty-six million cubic feet. The dam is constructed across the Futelao Nalla. The tank has two canals for irrigating the land under its command, *viz.*, Right and Left Bank canals. The tank has not, however, proved either remunerative or protective.

The Muwalia Tank at Dohad is situated within the limits of Muwalia village, three miles from Dohad town. The tank was constructed in the famine of 1900 to give employment to Bhils of Eastern Mahals. The work was practically completed and brought into operation in 1906-07. The tank occupies a picturesque basin surrounded by hills. The catchment area is thirty square miles consisting of hilly country and the capacity is 237 million cubic feet. The dam is constructed in two parts at right angles to one another. The length of the main dam is 1,780 feet and the maximum height sixty-four feet above ground. The tank has two canals, *viz.*, Right and Left Bank. The tank is much in demand and is very useful in ordinary years as well as in times of irregular rainfall.

Fields are also watered from rivers, ponds and wells and the few small tanks of the district. There are nearly three and a half thousand of wells used for irrigation.

Drinking Water.—The general condition of the drinking water supply is fair.

INDUSTRY

There is practically no local industry. There are two manganese mines at Halol employing about a thousand persons. The present position of the manganese trade does not, however, suggest that any large relief for famine could be afforded by these mines.

TRADE

The chief exports to Gujarat are grain, *mahua* flowers, timber and oilseeds ; the chief imports from Gujarat are tobacco, salt, cocoanuts, hardware and piece-goods. Timber is the chief article of export and most of it comes from the Bariya and Sanjeli forests.

COMMUNICATIONS

The Railway runs through the middle of the district from west to east. It branches from the Bombay, Baroda and Central India Railway at Anand and extends to Ujjain in the east, thus connecting with the whole of Northern and Central India. A chord line from Baroda to Godhra has already been opened. Four branch lines, one from Timba to Samlaya (running through the Gaekwar territory), another from Samlaya to Dabhoi, a third from Godhra to Lunawada and a fourth from Champaner Road Station to Pani Mines (in Chhota Udepar State) through Shivrajpur (in Halol) have also been opened.

A metalled road runs south from Lunawada to Godhra and continues to Kalol and Halol and thence across to the Jambughoda frontier. It thus traverses the whole of the western portion of the district from north to south. Another road runs north from the railway at Sunth road to the Sunth border. The old road running parallel to the railway from Anand to Dohad is still maintained, where it passes through the district, and a branch of it metalled and bridged connects Jhalod with the railway at Limkheda in Baria. From Limbdi on this road, a new metalled road running to Dohad and then south to the border, thus traversing from north to south the whole of the Eastern Mahals, was constructed by famine labour. It is hoped that this road will be the means of opening up the eastern tracts. The roads are in good condition from the end of the monsoon till the middle of the cold weather but later they get into a bad state accentuated in the west by the soft, sandy soil and everywhere by the heavy style of cart and poor class of oxen in use. From a famine point of view, however, the railways and the roads are excellently distributed.

RELIGION

The total population of the district 374,860 is composed of 344,712 Hindus, 26,685 Musalmans, 3,210 Christians, 240 Parsis and 13 persons belonging to various other castes or sects.

LANGUAGES

The vernacular is Gujarati which is spoken by 92·3 per cent. of the population. Hindi or Hindustani is spoken by 2·5 per cent. and Bhil languages by 4·0 per cent. The Musalmans of the district number about fourteen per cent. but, as elsewhere in Gujarat, they are either of Hindu origin or long settled in the district, and have adopted Gujarati as their tongue.

BROAD OCCUPATIONS

According to broad occupations 294,875 persons or 78·7 per cent. of the population are supported by Agriculture. Industries (including mines) support 24,194 persons or 6·5 per cent. 21,671 persons or 5·8 per cent. have to depend upon Commerce for their livelihood. The Professions and Liberal Arts support 5,719 persons or 1·5 per cent., while the remainder 28,401 persons or 7·6 per cent. have to follow various occupations for maintaining themselves.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district mainly according to occupations but in a few cases according to castes. The figures are based on the census of 1921 and represent both workers and their dependents.

Pasture and Agriculture.—Of the total population of 300,459 supported by pasture and agriculture 213,832 are ordinary cultivators, 77,699 farm servants and field labourers while 3,047 persons are dependent on income from rent of agricultural land. Among persons engaged in the raising of farm stock the most numerous are herdsmen, shepherds and goatherds 2,597 while cattle and buffalo breeders number 1,509. The economic condition of the classes noted above is detailed separately under that head.

Industry.—The wood industry stands first supporting 5,175 persons of which there are 2,135 carpenters, joiners, etc., and 2,172 basket-makers, workers in bamboos, etc. In the metal industry the workers in iron number 1,002 while those in brass, copper, etc., number only 73. There are 1,846 potters and 559 brick and tile-makers. The textile industry including weavers and other workers in cotton, wool, silk, etc., at home and in factories supports 1,066 persons. In the food industry rice pounders and flour grinders 685, manufacturers of vegetable oils 962, and butchers 236 are the most important. The building industry is mainly composed of bricklayers and masons 918, stone-cutters and dressers 383 and excavators, earth workers and well-sinkers 330. Under miscellaneous industries may be mentioned the barbers 1,563, tailors 1,162, shoe-makers 512 and washermen 271. The general condition of the classes mentioned above is fair as most of them now-a-days get ample work on reasonable wages.

Trade.—The trade in food stuffs (excluding hotels) is by far the most important. It supports 8,775 persons including grain and pulse dealers 6,713, grocers and sellers of oil, salt, condiments and spices 1,179, sellers of milk, butter, fish, poultry 283 and dealers in hay, grass and fodder 361. The trade in piecegoods and textiles supports 2,149 persons. Traders as a class may be taken as secure from famine.

Professional Beggars (1,578).—Some of them are petty cultivators. Besides owing to the migratory habits of the class, they are not likely to require any relief in times of famine.

Depressed Classes.—These include the Mahars and Dheds 6,491 who are small cultivators, village servants, sweepers in municipal towns, etc., Bhangis 5,393 who are mostly scavengers in municipal towns and Chambhars 3,995 who are leather workers. Some of these classes may require relief in times of acute distress.

Brahmans (7,285).—They are writers, priests, Government servants, money-lenders, petty dealers, etc., and are quite secure.

Musalmans (26,685).—They follow various occupations and are cultivators, weavers, butchers, traders, oil-pressers, etc., etc. Some of them are very rich. As a class they are well-to-do.

Christians (3,210) and *Parsis* (240) are quite well off.

ECONOMIC CONDITION

Trade is in the hands of the Banias, and Bohras and Ghanchis. The latter two classes of people monopolise the very considerable timber business and are almost confined to the two principal towns of Godhra and Dohad. The Banias are represented in all well-established villages. The bulk of the population are small cultivators who are somewhat backward in their methods and wanting in enterprise. They are mostly Kolis and Bhils. The number of Kanbis is gradually increasing and they are confined almost entirely to the Western Mahals. They are inferior to the Kanbis of Gujarat proper. There is a considerable leaven in the West also of Rajputs in all positions from peasant to Talukdar. The Musalman Ghanchis, a manly and energetic race, whose principal occupation used to be that of carriers, have now become the most enterprising cultivators in the district and are spreading from their headquarters at Godhra into distant villages. The Kolis form the bulk of the population in the west. They vary from the wild tribes of the Pal, who in habits approach the Bhil, to the Baria Koli who may be described as their aristocracy, and include the Koli Mewasdars. They are poor cultivators and have little resources in a severe scarcity. They would not be much affected by a slight scarcity and would only go to the relief works as a last resort.

The Eastern Mahals are chiefly occupied by Bhils. They are very poor and shiftless cultivators, much in power of the *savkars*, and are accustomed in all years to live partly on wild spinach, wild rice (*Nimar* and *Sathi*), wild grass seed (*samo*) and both the flowers and the fruits of the *mhowra* tree. Each family of the Bhil has generally some land to cultivate. The whole yield of this field is, as a rule, taken away by the *savkar* as soon as it is ready. So these people live on advances in grain made by *savkars* against the next yield, supplemented by such wages as they can earn as labourers and by forest produce. They never look ahead and so have little reserve stock of fodder, of food supply or money and have no resources, and so the failure of crops in any single season leaves them absolutely destitute. Bhils flock to relief works but they refuse to go long distances from home even if in sore distress. If hard pressed, they prefer to revert to their old habits of living by robbery and dacoity to working hard. The Naikadas especially are very difficult to manage. They will not work if they can help it. In case of severe distress they at once start for cattle lifting for food purposes. When cattle belonging to other persons cannot be had they, unlike the Bhils, would kill even their own. When no more food is available in this way, then only can they be persuaded to work. But more often their instincts would urge them to form themselves into gangs for criminal purposes.

The Bhils in normal times are not so criminally inclined, still they are rather partial to petty thefts and highway robberies, and in the last famine they were the most troublesome element in the Eastern Mahals. The Kolis are a little more civilised, but many of them even want careful watching by the Police in times of famine.

In times of famine and scarcity, Bhils from Dohad taluka only migrate to Malwa side in *rabi* season and return home before rains set in.

There are two towns, *viz.*, Godhra and Dohad, and they afford some labour when relief is needed. Dohad is likely to grow in importance when the B. B. & C. I. Railway Loco. and Wagon Workshops are opened there.

The area under cultivation increased steadily up to 1898-99 ; but the famine imposed a great check and in 1903-04 the gross area cropped was 403,000 acres or twenty-one per cent. less than that of 1898-99. In subsequent years, however, more area was brought under cultivation so that the gross area cropped in 1922-23 was 454,000 acres.

Agricultural stock diminished greatly between 1898-99 and 1901-02. Cattle fell from 323,000 to 148,000—a decrease of fifty-five per cent.—milk cows alone decreased by seventy-five per cent. Horses and ponies decreased from 3,200 to 1,700 and sheep from 5,500 to 2,200. Goats alone increased from 37,000 to 43,000. But in subsequent years the condition of the agricultural stock much improved so that the number of cattle according to the census of 1919-20 was 358,000 which included 67,000 milk cows and 44,000 she-buffaloes. According to this census, the number of horses and ponies was 2,800 whereas that of sheep and goats was 5,000 and 58,000 respectively.

Naturally it is those who have most to lose, and have a higher standard of living, that feel the effects of the famine longest. The small cultivator, who

lives from hand to mouth even in the best years, regains his former position at the end of the first good season. The Bhils and Kolis of the Mahals for the most part belong to this class. They are fairly well supplied with plough cattle for which *tagai* is freely distributed after the famine. Many have also accepted the new tenure and freed their land from encumbrances. Notwithstanding this, the *savkars* are not prevented from annexing the least share of the crops.

LIABILITY TO FAMINE

Locusts occasionally cause considerable damage to standing crops; but the distress is rarely severe. Severe scarcity would only be caused by complete drought. Late setting in of the rain or a failure of the late rains would cause some distress. There were no serious famines in the Panch Mahals between 1813-14 and 1898-99 but subsequently there have been several famines of which those of 1899-1900 and 1911-12 were most severe.

In the case of actual famine the whole district would suffer. In years of scarcity the eastern portion of the district (Dohad and Jhalod) is more likely to suffer than the western part, the country being more open, the soil lighter and the people more backward. It approaches to the conditions of Malwa, while the western portion is more akin to Gujarat. Scarcity is rare in the western division.

A record of damage done by locusts, rat, insects, floods, etc., is given in Appendices.

FORMER FAMINES

There was a somewhat serious crop failure in **1876-77** and relief works had to be opened in **1878,** but the administration of relief was only on a small scale.

The monsoon of **1899** failed completely. There was a normal fall in June but no useful rain thereafter. The early and late crops and the fodder supply failed completely and the famine was widespread.

In **1900** the total rainfall was good but was confined to the months of July, August and September. Both *kharif* and *rabi* crops suffered, but distress was much less severe than in the previous season. This was partly due to the unexpected assistance derived from the growth of the grass seed, *samo*, which, owing to the dearth of cattle, was produced most abundantly in the lands lying fallow, and supported large numbers of the poorer classes for some six months without any apparent deterioration of condition. The heavy mortality of the previous year amongst the weak and sickly population also operated to diminish the demand for relief.

The **1901** monsoon was rather below the normal all through and was seriously deficient from the beginning of September to the end of the year. *Kharif* crops suffered severely and the *rabi* failed completely. The estimated proportion of outturn to the average was only eight per cent. Great havoc was also wrought by rats, which attacked every crop including cotton and oil-seeds. There was an almost total failure of grass seeds all over Gujarat, and this, in part, caused an extensive renewal of immigration from foreign territory. The maximum numbers on relief works were not quite so great as in 1899-1900 but the daily average for the whole period was greater. Taking all kinds of relief into consideration the daily average of the two periods was about the same.

The effects of the famine of 1899-1900 lasted till **1902-03.** In the Eastern Mahals though famine was not declared test works were opened in **1904-05.** Again in **1907-08** there was famine in the Eastern Mahals. By the beginning of 1910-11, the district was gradually shaking off the effects of past famines but the normal conditions had not yet been fully restored when unfortunately there was severe famine in **1911-12.**

The cause of this famine was the practical failure of the monsoon and consequently of the crops and grazing combined with the total absence of resources on the part of the Bhils, Naikadas and other backward classes who form the agricultural community of the district. Caterpillars also appeared in many parts and aggravated the situation. As a result, for all practical purposes there was a complete failure of crops throughout the district, and necessitated opening of village and public works on a large scale over the whole district. The works were in progress from October 1911 to August 1912 and the highest number of workers reached was over forty-eight thousand in March 1912.

The scanty and badly distributed rainfall of 1918 brought on famine conditions in **1918-19.** In the Eastern Mahals famine was declared while the Western Mahals were treated as scarcity area. In the famine area there was no hesitation on the part of the people in attending the works. The number of workers rose very rapidly so that the average daily number on works and gratuitous relief in April and May 1919—the worst months—were over thirty-one thousand. With the good rainfall in the following year the numbers fell as rapidly as they had risen and all Public Works were closed by the end of July. In the scarcity area there was no occasion for opening more than one Public Work and several ordinary and village works had to be closed shortly after they were opened for want of attendance. The average daily number in receipt of relief on works and gratuitous relief was highest in April 1919 when it was slightly over seven thousand and a very large proportion of this relief was gratuitous.

There were two important causes which brought about scarcity in **1920-21.** One was the absence of the late rains and the other was a serious plague of caterpillars which in parts repeatedly devoured crops. Scarcity prevailed in consequence and measures such as remissions and suspensions, grant of *tagai*, provision of work in Forests, etc., etc., had to be adopted. These measures were not however found adequate enough to cope with the situation and Government Relief Works were required to be opened, in the Eastern Mahals. The maximum attendance on these works was three and a half thousand at Dohad in July 1921 and five thousand at Jhalod, in the same month. Works were finally closed at the end of the month (July 1921) as heavy rain was received at the time. Gratuitous relief was also given in cash and grain at the expense of Government.

It may here be noted that grass for cattle was obtained from outside the district in these three recent famines of 1911-12, 1918-19 and 1920-21 and supplied to the people from depôts established at convenient centres.

FORECAST OF RELIEF WORKERS

During the last two decades there were only three years in which conditions amounted to a famine in extensive areas. They were 1911-12, 1918-19 and 1920-21. In the first of these, the distress was acute as there was a failure not only of the *kharif* crops and the more valuable *rabi* crops but also of fodder and grass and of water over large area. As a result fifteen per cent. of the population in 1911 resorted to relief works and nearly the same percentage to gratuitous relief in March and April 1912 during which months the attendance was the highest.

In 1918-19 famine was declared in the Eastern Mahals while the Western Mahals were treated as scarcity area. The highest number of persons attending relief works was about sixteen thousand and the number gratuitously relieved was nearly the same. This number was reached in April-May 1919.

In 1920-21 the distress was neither so acute nor so widespread as in the previous two famines of 1911-12 and 1918-19. Suspensions of land revenue, and *tagavi* advances were found generally sufficient to meet the situation. Relief works were however found necessary in certain areas. The maximum attendance was about three thousand and a half at Dohad in July 1921 and a little over five thousand at Jhalod in the same month.

Judging by the experience of the previous famines and taking the various circumstances into consideration such as (1) the probable extent of immigration, (2) the existence of a large population of Bhils and other forest tribes who, except in bumper seasons, suffer for some months every year from a scarcity of grain and live on forest products, etc., etc., we will not be far off the mark if we place the probable maximum number of relief workers at sixty thousand. In addition, provision would require to be made for giving gratuitous relief and in a very acute famine the number on this kind of relief might again exceed the number actually attending works.

PANCH-MAHALS STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

Irrigation Abstract, 1922-23.

No.	Taluka.	Number and area of villages. Government: No.	Government: Area in square miles.	Alienated: No.	Alienated: Area in square miles.	Total: No.	Total: Area in square miles.	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Total.	Area irrigated. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		No.	Acres	No.	Acres	No.	Acres	No.	No.	Rs.	No.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Godhra ..	205	508	33	79	238	587	139,450	238	1,19,791	207	327,330	87·2	772	158,806	21,715	181,293	24,905	89,103	32,029	146,037	86	..	7	826	..	919	28	227	..	..	..	122	499	49	..	..	116	1,041	122	919
2	Kalol ..	59	138	9	14	68	152	49,308	322	69,814	59	88,589	90·3	361	50,838	3,092	54,291	2,772	21,527	9,999	34,298	..	..	150	226	..	376	120	15	..	..	..	92	52	..	..	97	376	..	376
3	Halol Peta ..	151	232	15	29	166	261	56,899	218	62,083	151	148,687	89·0	38	75,330	23,684	99,052	6,486	28,365	14,784	49,635	..	..	..	38	..	38	..	..	..	..	..	29	9	..	..	..	38	..	38
4	Dohad ..	114	316	8	23	122	339	80,313	238	1,17,205	77	144,237	66·6	1,031	68,624	6,995	76,650	11,164	36,234	20,189	67,587	839	..	..	948	..	1,787	455	895	..	..	..	433	4	..	..	..	1,787	..	1,787
5	Jhalod Peta ..	86	225	11	44	97	269	48,950	182	58,535	86	144,121	83·6	4,201	63,343	10,755	78,299	28,255	26,863	10,704	65,822	135	..	..	4,736	142	5,013	..	3,140	..	..	..	1,862	11	..	..	..	5,013	..	5,013
	Total ..	615	1,419	76	189	691	1,608	374,860	233	4,27,428	580	852,964	82·9	6,403	416,941	66,241	489,585	73,582	202,092	87,705	363,379	1,060	..	157	6,774	142	8,133	603	4,277	..	..	..	122	2,915	125	..	..	8,255	122	8,133

Cultivated and Uncultivated Area, 1918-19.

Irrigation Abstract, 1918-19.

No.	Taluka.	Number and area of villages. Government: No.	Government: Area in square miles.	Alienated: No.	Alienated: Area in square miles.	Total: No.	Total: Area in square miles.	Population (1911). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Total.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		No.	Area in square miles.	No.	Area in square miles.	No.	Area in square miles.	No.	No.	Rs.	No.																														
1	Godhra ..	205	507	33	78	238	585	117,466	201	1,14,918	206	326,013	86·9	1,768	79,999	96,178	177,945	27,462	89,103	31,503	148,068	2	..	..	1,860	61	1,923	13	142	36	..	..	999	478	15	258	..	200	2,132	209	1,923
2	Kalol ..	59	138	9	14	68	152	43,863	287	69,033	59	88,577	90·3	590	45,273	8,165	54,028	2,491	21,527	10,531	34,549	..	..	10	611	..	621	10	65	..	..	..	15	1	25	111	..	396	621	..	621
3	Halol Peta ..	151	233	15	29	166	262	46,947	180	69,333	151	149,074	89·0	20	76,755	12,847	89,622	6,770	28,379	24,303	59,452	..	..	..	20	5	25	..	4	..	..	..	..	..	8	12	..	1	25	..	25
4	Dohad ..	114	315	8	23	122	338	73,524	218	1,09,313	77	144,227	66·6	903	57,684	17,167	75,754	18,967	36,234	13,272	68,473	828	..	..	112	..	940	85	113	..	..	..	..	515	4	85	..	138	940	..	940
5	Jhalod Peta ..	86	225	11	44	97	269	40,893	152	54,156	86	144,105	83·6	2,594	40,769	33,755	77,118	29,660	26,863	10,464	66,987	130	..	..	2,776	200	3,106	..	687	890	..	..	805	207	6	69	..	451	3,106	..	3,106
	Total ..	615	1,418	76	188	691	1,606	322,695	200	4,07,753	579	851,996	82·7	5,875	300,480	168,112	474,467	85,350	202,106	90,073	377,529	960	..	10	5,379	266	6,615	108	1,011	926	..	..	1,810	1,201	56	526	..	1,186	6,824	209	6,615

Crops, 1922-23.

No.	Taluka.	Cereals. Bajri.	Rice.	Wheat.	Ragi.	Maize.	Barley.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mung and Udid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetable.	Green Fodder.	Fruit trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.	Oil Seeds. Sesamum.	Linseed.	Castor-seed.	Groundnut.	Safflower-seed.	Niger-seed.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped more than once.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Godhra ..	22,582	31,165	5,729	11,808	36,090	496	26,544	..	134,417	3,499	17,004	4,192	796	766	26,247	1,782	848	..	2,630	751	..	751	548	49	11,555	..	471	2,867	..	..	591	15,984	..	3,482	3,184	6,666	31,537	218,329	23,016	195,313
2	Kalol ..	12,447	9,775	111	4,327	439	..	12,567	..	39,666	2,399	896	1,205	493	..	4,993	1,852	1,299	30	3,181	153	..	153	97	52	587	..	315	7,581	..	..	..	8,483	..	2,590	345	2,935	440	60,600	1,169	58,831
3	Halol P. ..	7,133	16,980	521	1,546	2,217	..	19,533	232	48,162	2,232	2,143	1,110	378	..	5,863	1,342	288	..	1,630	78	..	78	35	9	1,596	..	210	2,688	..	..	1,300	5,794	..	28,712	346	29,058	2,640	93,269	4,497	88,772
4	Dohad ..	84	4,958	3,575	1,125	61,933	5,594	2,399	4,684	84,352	1,021	30,783	3,702	714	4,107	40,327	124	4	..	128	137	..	137	384	4	3,308	62	775	1,364	..	2	5,949	11,460	..	812,020	2,028	12,677	151,497	44,416	107,081
5	Jhalod P. ..	..	5,989	7,846	995	49,091	1,643	3,319	974	69,857	410	16,704	1,290	1,104	132	19,640	21	257	..	278	79	..	79	721	11	5,491	2	4,259	15	..	..	181	6,948	..	13,747	3,746	11,270	112,552	25,541	87,011
	Total ..	42,246	68,870	17,782	19,801	149,770	7,733	64,362	5,890	376,454	9,551	67,530	11,499	3,485	5,005	97,070	5,121	2,696	30	7,847	1,198	..	1,198	1,785	125	22,537	64	3,030	14,515	..	2	8,021	48,169	..	34,793	9,642	44,435	58,564	635,647	98,639	537,008

Crops, 1918-19.

No.	Taluka.	Cereals. Maize.	Bajri.	Rice.	Wheat.	Coarse grains.	Ragi.	Barley.	Others.	Total.	Pulses. Tur.	Gram.	Mung and Udid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetable.	Green Fodder.	Fruit trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.	Oil Seeds. Sesamum.	Linseed.	Castor Seed.	Groundnut.	Safflower-seed.	Niger-seed.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped more than once.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Godhra ..	34,992	21,521	7,628	154	6,895	36	..	7,700	78,926	1,300	55	..	..	..	1,355	797	1,094	..	2,791	480	..	480	408	15	3,045	..	1,109	556	..	..	2	4,712	..	7,078	1,560	8,638	8,754	106,809	1,240	104,859
2	Kalol ..	575	15,566	6,215	65	3,276	..	942	8,143	34,787	1,709	41	..	..	..	1,750	3,642	..	..	3,642	45	..	45	76	23	995	..	263	2,140	..	..	..	3,398	..	3,502	3,602	7,104	1,897	52,722	414	52,308
3	Halol P. ..	2,015	5,923	11,564	4	14,951	..	311	1,499	36,267	2,331	..	..	..	..	782	3,113	806	626	1,430	31	..	31	..	8	2,500	..	467	75	..	..	..	3,042	..	34,800	125	34,925	12,219	91,035	1,599	89,436
4	Dohad ..	62,944	16	4,674	125	1,771	8	403	592	70,533	696	202	1,874	464	56	3,292	62	125	..	187	54	..	54	185	4	2,287	..	2,020	604	..	..	..	4,911	..	33	466	499	7,527	86,992	770	86,222
5	Jhalod P. ..	38,065	..	3,415	692	976	905	197	236	44,486	373	886	538	..	127	1,924	60	44	..	104	28	..	28	407	6	1,480	..	507	87	..	..	24	2,098	..	29	533	562	13,677	63,292	3,106	60,186
	Total ..	138,591	43,026	39,496	1,040	27,869	949	1,858	18,170	264,999	6,409	1,184	2,412	464	965	11,434	5,367	2,787	..	8,154	638	..	638	1,076	56	10,307	..	4,366	3,462	..	..	26	18,161	..	45,442	6,286	51,728	43,874	400,120	7,129	392,991

Agricultural Stock, 1919-20.

Agricultural Stock, 1915-16.

No.	Taluka	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e. of over 2 Cattle.	Carts. For passengers.	Carts. For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Godhra ..	41,627	6	109	206	132	13	27,276	21,176	34,299	13,183	138,027	986	114	21,425	19,564	3	80	4,060	8·7
2	Kalol ..	14,353	5	29	28	59	4	6,110	6,226	9,853	4,967	41,634	349	423	3,556	6,824	3	45	2,226	9·0
3	Halol Peta ..	15,953	4	36	44	39	6	6,829	5,875	12,042	5,192	46,020	570	82	7,139	7,850	..	159	1,965	13·9
4	Dohad ..	29,947	3	85	97	113	5	16,170	6,234	23,964	5,079	81,697	485	2,830	14,042	10,505	3	35	3,142	8·3
5	Jhalod Peta ..	18,370	9	25	25	6	8	10,533	4,750	14,220	3,124	51,070	387	1,513	11,765	8,768	..	11	1,126	8·0
	Total ..	120,250	27	284	400	349	36	66,918	44,261	94,378	31,545	358,448	2,777	4,962	57,927	53,511	9	324	12,519	10·5

No.	Taluka	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e. of over 2 Cattle.	Carts. For passengers.	Carts. For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Godhra ..	36,273	8	123	101	176	7	26,031	15,070	32,480	12,715	122,984	753	313	22,923	16,967	..	82	3,268	9·4
2	Kalol ..	27,766	8	58	52	123	5	16,870	9,515	23,323	8,144	85,862	678	145	12,839	13,449	..	207	3,811	9·4
3	Halol Peta ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Dohad ..	38,763	4	161	151	352	22	26,384	9,721	31,775	7,858	115,191	782	2,384	22,301	18,342	9	58	2,439	10·1
5	Jhalod Peta ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	102,802	20	342	304	651	32	69,285	34,306	87,578	28,717	324,037	2,413	2,842	58,063	48,758	9	347	9,516	9·8

PANCH MAHALS STATISTICAL TABLES—II.

Water Supply—1922-23

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Godhra	13	..	..	..	..	..	394	478	872	1,720	53	13	..	328	9	13	290
2	Kalol	..	..	..	..	..	..	101	486	587	312	77	11	7	188	5	..	9
3	Halol P.	..	..	..	..	..	..	29	241	270	457	68	1	6	176	..	2	106
4	Dohad	10	..	..	..	..	..	428	75	503	444	37	..	14	106	81	..	9
5	Jhalod P.	..	..	..	..	..	..	1,144	29	1,173	530	3	3	..	62	5	..	439
	Total	23	..	..	..	..	..	2,096	1,309	3,405	3,463	238	28	27	860	100	15	848

Government Protective Irrigation Works—1922-23

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Futelao Tank ..	1,500	1,200	840	800	30	83	113
2	Muwalia Tank ..	3,000	2,000	1,500	1,500	74	801	875
	Total ..	4,500	3,200	2,340	2,300	104	884	988

Holdings—1921-22

No.	Taluka.	Number of Holdings. Under and up to 5 Acres.	Over 5 and up to 25 Acres.	25 to 100 Acres.	100 to 500 Acres.	Over 500 Acres.	Total Number.	Total Area.	Average. Area of Holding.	Assessment per Holding.	Assessment per Acre.
		No.	No.	No.	No.	No.	No.	Acs.	Acs.	Rs. a. p.	Rs. a. p.
1	Godhra ..	6,789	6,435	623	49	6	13,902	119,860	8·7	6 9 1	0 8 2
2	Kalol ..	4,792	1,418	137	1	..	6,348	31,065	4·8	5 4 0	1 1 2
3	Halol Peta ..	2,052	2,302	189	11	1	4,555	40,919	8·9	8 9 8	0 14 10
4	Dohad ..	3,685	4,452	338	22	..	8,497	75,707	8·9	9 4 0	1 0 11
5	Jhalod ..	1,991	3,335	214	9	3	5,552	55,183	9·9	7 6 1	0 13 3
	Total ..	19,309	17,942	1,501	92	10	38,854	322,734	8·3	8 0 9	0 15 6

Incidence of Assessment—1920-21

No.	Taluka.	Fully Assessed Area. Area.	Assessment.	Incidence per Acre.	Fully Assessed Area including Alienated Land in Government Villages. Population.	Incidence per Head of population including Abkarians.
		Acres.	Rupees.	Rs. a. p.	No.	Rs. a. p.
1	Godhra ..	97,077	95,185	0 11 5	100,666	0 15 1
2	Kalol ..	17,846	48,213	1 14 4	28,102	0 11 5
3	Halol Peta ..	35,307	44,361	1 1 11	28,823	1 8 7
4	Dohad ..	67,239	84,885	1 3 0	60,634	1 6 4
5	Jhalod ..	42,690	39,917	0 14 0	32,505	1 3 7
	Total ..	260,159	312,561	0 15 11	250,730	1 3 11

Government Protective Irrigation Works—1918-19

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Futelo Tank ..	1,500	1,200	840	800	18	....	18
	Total ..	1,500	1,200	840	800	18	..	18

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Godhra ..	Maximum 1878 ..	0·09	..	..	..	0·33	1·58	29·37	22·18	10·21	0·38	..	..	64·14
		Minimum 1911 ..	0·08	..	0·76	..	..	3·31	0·92	1·59	0·84	0·01	0·03	..	7·52
		Average ..	0·10	0·09	0·06	0·65	0·47	5·78	14·59	10·67	5·84	0·93	0·13	0·06	38·78
		Rainfall for 1922-23 ..	..	0·12	0·02	..	0·05	7·02	14·02	3·29	13·51	0·01	..	..	38·04
2	Kalol ..	Maximum 1917 ..	0·02	0·01	..	0·13	6·25	7·12	12·23	8·56	26·96	4·99	..	..	66·27
		Minimum 1899 ..	..	..	..	..	0·34	4·54	0·93	0·01	0·56	..	..	..	6·38
		Average ..	0·07	0·10	0·09	0·01	0·41	5·05	14·43	10·07	6·58	0·82	0·12	0·04	37·84
		Rainfall for 1922-23 ..	..	0·20	0·10	0·78	..	6·59	12·32	4·20	13·69	..	..	..	37·88
3	Halol P. ..	Maximum 1878 ..	..	..	..	0·08	0·12	2·74	37·98	27·81	9·86	2·40	..	..	80·99
		Minimum 1899 ..	..	..	..	..	0·65	3·43	0·68	0·31	1·96	0·09	..	0·13	7·25
		Average ..	0·09	0·11	0·09	0·03	0·33	5·35	16·38	11·12	6·83	1·21	0·12	0·06	41·72
		Rainfall for 1922-23 ..	..	0·31	..	0·99	..	6·06	15·38	4·42	10·28	..	0·06	..	37·45
4	Dohad ..	Maximum 1893 ..	0·06	0·84	..	0·10	4·17	9·74	8·94	15·02	8·69	..	1·38	..	48·94
		Minimum 1911 ..	..	..	0·54	..	..	5·55	1·65	1·36	1·48	0·05	0·17	..	10·84
		Average ..	0·11	0·16	0·03	0·04	0·51	4·34	8·87	7·60	5·58	1·10	0·19	0·11	28·69
		Rainfall for 1922-23 ..	..	..	0·03	..	..	1·05	7·42	2·12	8·02	..	..	..	18·67
5	Jhalod P. ..	Maximum 1913 ..	..	..	..	..	1·44	10·76	26·99	7·41	4·82	..	..	0·16	51·52
		Minimum 1899 ..	..	..	..	..	0·13	6·40	1·37	0·06	1·53	0·07	..	0·02	9·58
		Average ..	0·10	0·12	0·06	0·04	0·61	5·03	9·99	8·48	4·98	0·78	0·22	0·11	30·52
		Rainfall for 1922-23 ..	..	..	..	0·25	..	1·13	5·35	3·35	11·92	..	..	..	22·02
6	Jambughoda D. ..	Maximum 1878 ..	..	..	..	0·01	0·10	2·00	39·58	32·20	10·22	1·85	..	..	86·16
		Minimum 1899 ..	..	..	..	..	1·55	11·42	0·77	0·36	0·35	..	..	..	14·45
		Average ..	0·13	0·09	0·07	0·06	0·47	7·01	16·73	12·70	5·75	0·95	0·28	0·07	44·33
		Rainfall for 1922-23 ..	..	0·16	..	0·15	..	3·66	15·85	7·03	11·26	..	0·12	..	38·23

Temperature Details (Godhra).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	83	88	86	107	104	85	89	86	88	96	92	87
	,, minimum ..	59	65	62	75	82	82	83	78	80	72	63	57
	Absolute maximum ..	88	96	102	109	110	110	98	90	100	101	99	96
	,, minimum ..	56	56	56	62	78	76	74	76	74	66	56	50
1914	Mean maximum ..	89	94	97	103	105	91	88	87	88	89	89	82
	,, minimum ..	57	63	60	76	84	80	79	76	73	71	66	50
	Absolute maximum ..	94	98	105	110	110	101	98	94	90	94	98	86
	,, minimum ..	54	50	52	70	80	76	76	76	72	68	56	46
1915	Mean maximum ..	78	83	93	100	105	102	93	87	93	89	86	81
	,, minimum ..	52	52	77	77	84	80	79	76	76	70	62	56
	Absolute maximum ..	86	90	100	110	112	110	100	90	90	94	92	84
	,, minimum ..	45	42	56	66	78	78	76	74	76	66	54	52
1916	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..												
	,, minimum ..												
1917	Mean maximum ..	Details not available.					93	96	86	85	88	79	79
	,, minimum ..						77	83	80	78	72	61	61
	Absolute maximum ..						100	104	96	90	88	82	84
	,, minimum ..						72	75	78	74	72	56	72
1918	Mean maximum ..	79	86	93	97	101	96	92	89	92	92	81	76
	,, minimum ..	56	59	66	73	85	85	79	80	79	75	74	55
	Absolute maximum ..	88	98	99	106	108	99	95	98	98	94	88	78
	,, minimum ..	54	49	52	66	80	76	76	70	72	72	68	53
1919	Mean maximum ..	66	68	90	101	102	96	83	81	85	84	80	70
	,, minimum ..	61	62	69	79	82	79	78	76	74	74	70	62
	Absolute maximum ..	72	72	101	105	103	104	88	90	98	88	84	84
	,, minimum ..	56	60	64	76	80	74	75	70	74	70	68	60
1920	Mean maximum ..	93	96	100	106	102	94	92	90	101	100	99	96
	,, minimum ..	64	71	77	82	79	83	81	79	80	77	71	62
	Absolute maximum ..	98	103	104	109	112	114	100	96	106	102	100	98
	,, minimum ..	60	62	72	78	78	80	78	78	78	72	68	62
1921	Mean maximum ..	86	94	105	112	110	104	95	87	95	96	94	85
	,, minimum ..	60	59	72	72	84	85	83	80	79	79	67	57
	Absolute maximum ..	92	102	110	116	118	108	104	90	90	102	99	90
	,, minimum ..	56	62	68	74	82	84	80	78	72	74	64	62
1922	Mean maximum ..	83	98	101	107	108	101	91	88	87	98	92	86
	,, minimum ..	63	69	70	78	81	84	82	79	78	74	70	63
	Absolute maximum ..	94	102	106	113	113	110	98	91	91	99	94	89
	,, minimum ..	58	62	58	74	78	82	78	72	74	71	62	56

Prices—1922-23

No.	Taluka.	Price in Lbs. per Rupee. Maize.	Bajri (Real).	Rice.	Tuvar.	Jowari.	Kadhi.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Head-quarter towns.								Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Godhra ..	22	..	9	11	..	..	62	2 0 0	0 8 0	0 8 0
	Non-head quarter towns.										
2	Kalol ..	..	..	8	11	..	..	50	2 0 0	0 7 8	0 6 10
3	Halol Peta ..	20	20	10	12	..	..	..	1 8 0	0 9 2	0 9 6
4	Dohad ..	24	..	8	10	..	..	98	2 5 4	0 5 11	0 4 10
5	Jhalod Peta ..	27	..	11	9	..	..	107	1 12 0	0 4 0	0 6 0
	Average of the non-head-quarter towns.	23	20	9	10	..	..	85	1 14 4	0 6 8	0 6 9

Prices—Pre-war Normal

No.	Taluka.	Prices in Lbs. per Rupee. Maize.	Bajri (Real).	Rice.	Tuvar.	Jowari.	Kadhi.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
									Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Godhra ..	28	31	14	17	..	..	128	0 13 7	0 4 0	0 3 10
2	Kalol ..	..	32	17	18	167	..	..	0 12 0	0 3 6	0 3 5
3	Halol Peta ..	27	32	17	18	158	142	0 12	0 4 0	0 4 5	0 4 7
4	Dohad ..	32	..	16	17	..	152	1 0 2	0 3 2	0 3 4	..
5	Jhalod ..	35	..	17	16	..	147	0 11 4	0 2 2	0 2 4	..
	Average of the non-head-quarter towns.	31	32	17	17	162	147	0 12 11	0 3 4	0 3 5	..

Famine Relief—Average Daily Numbers 1911-12, 1918-19 and 1920-21

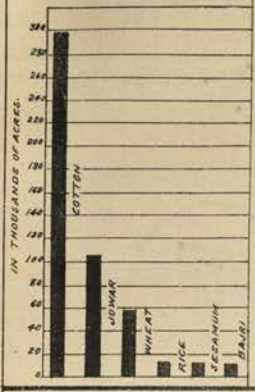
Month	1911-12. Relief workers.	Dependents.	Gratuitously relieved.	Total daily average.	Price in Lbs. per Rupee. Maize.	Bajri.	1918-19. Relief workers.	Dependents.	Gratuitously relieved.	Total daily average.	Price in Lbs. per Rupee. Maize.	Bajri.	1920-21. Relief workers.	Dependents.	Gratuitously relieved.	Total daily average.	Price in Lbs. per Rupee. Maize.	Bajri.
	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
August	1,319			1,319	22	20												
September	2,224			2,224	19	18												
October	2,162	8,386		10,548	25	18												
November	4,450	21,497		25,947	21	18												
December	20,822	96,234		117,056	22	20												
January	17,034	50,542		67,576	22	20	1,120	366	15	1,501	12	7						
February	27,802	69,854		97,656	21	20	4,752	2,965	286	8,003	12	6						
March	46,307	97,464		143,771	21	20	11,304	7,303	1,146	19,753	11	6						
April	46,527	87,352		133,879	20	20	16,184	13,780	1,211	31,675	12	8	528			528		
May	36,421	71,953		108,374	18	20	14,804	14,668	1,934	31,406	11	8	2,091	413	713	3,217	16	9
June	47,475	92,481		139,956	18	18	5,810	10,842	2,104	18,756	12	8	3,889	923	1,136	5,949	14	8
July	30,915	57,698		88,613	19	18	2,019	4,148	4,256	10,415	11	7	4,935	1,573	1,499	8,008	12	8
August	33,550	47,216		80,766	21	18	61	1,436	3,141	4,638	14	10		130	477	607	12	8
Average for the period	27,991	..	29,833	57,824	20	19	7,007	6,938	1,825	15,770	12	8	2,288	606	766	3,662	14	9

Scarcity figures not available.

BROACH DISTRICT

BROACH DISTRICT.

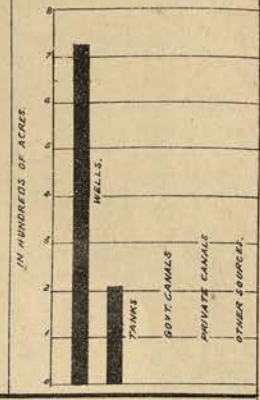
RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER IRRIGATION.

ONE DOT = 1 ACRE.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



AREA UNDER CROPS.

JOWAR. ONE DOT = 100 ACRES.

RICE. ONE DOT = 100 ACRES.

WHEAT. ONE DOT = 100 ACRES.

TUR. ONE DOT = 100 ACRES.

SESAMUM. ONE DOT = 100 ACRES.

COTTON. ONE DOT = 1000 ACRES.

KHARIF-SEASON ONE DOT = 10 CENTS.

RAINFALL.

RABI-SEASON ONE DOT = 10 CENTS.

HOT-WEATHER ONE DOT = 10 CENTS.

BROACH DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.

INTENSITY OF FAMINE IN 1918-19.

INTENSITY OF FAMINE IN 1920-21.

NUMBER OF CATTLE.

1909-10

ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.

BROACH COLLECTORATE
Scale of Miles
10 5 0 10
Bridge
Metalled Roads
Unmetalled Roads
CAMBAY
KAIRA COL:
BARODA STATE
RAJPIPLA STATE
GULF OF CAMBAY
SURAT COLLTE
BARODA STE
RAJPIPLA
MAHI RIVER
NARBADA RIVER
DHADHAR R.
KIM R.
AMRAVATI R.
Ferry to Cambay
Nesar Road Sy. Stn
JAMBUSAR
AMOD
Sarbhan
VAGRA
BROACH
ANKLESVAR
HANSOT
Shahabad
Sukaltirth
Amleshvar
Jhadesar
Alia Bet
Dev Jagan
Kabirwad
to Ahmedabad
to Nandod
to Rupnagar
from Bombay
from Olpad
to Mandvi
REFERENCE
Bazar Village
Deserted Village
Post Office
Hospital
Dispensary
Municipality
Place of Pilgrimage
Taluka Boundary
Railway and Station
Tanks
Canals
Salt Pans
Bungalow suitable for Gazetted Officers
Small Rest House or Dharmashala suitable only for Subordinates
1st Class Motor Roads, i.e., fit for driving by day or night
2nd Class Motor Roads, i.e., practicable for strong touring cars with a full clearance in day light if cautiously driven
OBSTACLES ON MOTOR ROADS
Ferry Boat (able to take touring cars)
Hard causeway, passable except in flood
Ford, depth in dry season not exceeding 1½ feet
Tidal ford; falling below 1½ feet at low tide only
Not passable, except at unusually low tides or with special arrangements
Ghat roads over which Motors are not allowed at night
Provincial Road under construction
Other Roads and Cart Tracks
Tidal limits
Steamer Line

BROACH

POSITION AND AREA

The district of Broach lies between 21° 25′ and 22° 15′ North latitude and 72° 31′ and 73°10′ East longitude and covers an area of 1,467 square miles. It is bounded on the north by the river Mahi which separates it from the territory of Cambay; on the east and south-east by the Native States of Baroda and Rajpipla; on the south by the river Kim, dividing it from the Surat district. To the west lies the Gulf of Cambay, along the shore of which the district stretches for a distance of fifty-four miles.

PHYSICAL FEATURES

The district forms an alluvial plain fifty-four miles in length, sloping gently westwards to the shores of the Gulf of Cambay and varying in breadth from twenty to forty miles. With the exception of a few hillocks of sand-drift along the coast and some mounds in the neighbourhood of Broach City, the level of the plain is unbroken by any rising ground.

As already noted the Mahi and Kim form respectively the northern and southern boundaries of the district. Between these limits are two other rivers which discharge their waters through the Broach plain into the Gulf of Cambay—the Dhadhar about twenty miles south of the Mahi, and the Narbada between the Dhadhar and the Kim. The Dhadhar passes through the Broach plain for twenty-four miles or about one-third of the entire length of its course; and the Narbada flows for the last fifty miles of its course through the district gradually widening into an estuary, whose shores when they fall away into the Gulf of Cambay are more than thirteen miles apart. The water of these rivers is hardly made use of for irrigation owing to the height of their banks; and though each has a tidal estuary extending for a good many miles inland none of them except the Narbada, and for a short distance the Dhadhar, is seviceable for purposes of navigation.

RAINFALL AND CLIMATE

The district is as healthy as any part of Gujarat and the climate is more pleasant than in those parts situated farther from the sea. The hottest months are March and April. In the cold season frost is not unknown, and is sometimes, as in 1835 and 1903 sufficiently severe to destroy the crops. The temperature varies from 46°F in December to 112°F in May. The annual rainfall over the whole district averages slightly over thirty-three inches, varying from twenty-seven inches at Dehej in the Vagra taluka to forty inches at the head-quarters. During the last forty-five years the maximum amount of rain recorded was 109·40 inches in 1878 at the Ilav dispensary in the Ankleshwar taluka. The minimum amount during this period was 4·50 inches which was received at Amod in 1899. The rains usually begin in June and end in October; at other times rain is rare. July is the wettest month.

SOIL

The soils of the district are divided into light and black each with several sub-divisions. The different varieties of black or *Kali* soil occupy about three-fourths of the whole culturable area. They range from the rich alluvial deposits on the banks of Narbada, through the regular deep cotton mould, *kanam*, to the shallow *bara* lands near the sea. The staple crops on the black soil are rice, cotton, wheat, *jowari* and *bajri*. In the *bara* (seaside) country of Vagra, Jambusar and Amod the conditions are similar to those of the *Bhal* tract of Ahmedabad. The light soil *gorat*, *goradu* or *marva*, varies from the consolidated sand-drift in the south of the district, to the heavier lands merging into the richest alluvial soil or *bhatha*. *Gorat* or *Marva* occupies in the north nearly one-third of Jambusar, the largest taluka, and is also found in some villages in south-western Vagra. It yields cereals (*bajri* and *jowari*), pulses and garden stuffs. *Bhatha*, a rich fresh alluvial deposit, raises all kinds of products, especially tobacco and castor oil plants.

CROPS

The principal crop of the district is cotton which occupies on an average from two and a half to three lakhs of acres or nearly two-fifths of the whole area cropped. It is a black soil crop and the same field usually grows cotton every second year. In a few villages the people grow rice and cotton mixed, a practice unknown in other parts of the Presidency except in the neighbouring district of Surat. This safeguards the cultivator, for with a heavy rainfall the rice does well, while with light or moderate rain the cotton thrives the better. *Jowar* is the staple grain crop and the food of the people of the black soil villages. It is the principal rotation crop with cotton. *Bajri*, rice and wheat are also important. *Lang*, *tur* and sesamum as *rabi* crops are grown in cotton land, especially when the early rainfall is too heavy for cotton and all are large crops. Tobacco, a most profitable product, is grown on the alluvial lands of the Narbada. Garden cultivation is important in Jambusar.

CATTLE

The district which consists mainly of black soil plain and grows much cotton, is essentially a non-breeding district and imports most of its working bullocks from out side. There is little free pasturage and no professional breeders except in the Jambusar taluka. Village cows are kept incidentally and the type is Gujarati but the breeding is of little account. Many cultivators keep buffaloes for milk purposes and for this purpose set aside a small portion of their land and leave it under grass; and where fodder is more plentiful as in the river side portion of the Ankleshwar taluka, cultivators rear cattle which they purchase young from Upper Gujarat. Out of a total of one and a half lakhs of cattle nearly two-fifths are oxen for ploughs, about thirty per cent. milch cattle and two-third young stock. Sheep and goats which numbered over forty-three thousand in 1915-16 have been reduced to thirty-one thousand in 1919-20 presumably owing to the famine of 1918-19. The number of horses and ponies (three thousand) remains almost constant.

FORESTS

Except for a small tract of waste land set apart for the growth of *babul* trees, the district is without forest. The Palmyra palm, the only liquor yielding tree, is largely found south of the Narbada.

IRRIGATION

There are no important protective irrigation works and indeed little irrigation of any kind in the district. Small irrigation tanks are only important in Jambusar, Ankleshwar and Hansot and are mostly used for rice cultivation. Irrigation wells which number 1,189 in the district are mostly found in Broach, Ankleshwar and Jambusar talukas. Vagra taluka is worst off as regards water-supply. It is very flat and raised little above the high water level of the sea. Wells are in many places brackish and the water is liable to become brackish also in tanks if they are deepened by removal of silt. In 1899-1900 bunds were built as famine works to reclaim land in Hansot Mahal and at Asarsa in Jambusar. These bunds protect a large area from flooding by salt water.

DRINKING WATER-SUPPLY

Drinking water-supply is adequate in all parts of the district except in the *Bara* tract of Jambusar and Vagra talukas and in a few villages on the western side of Hansot Mahal. Owing to the saltish nature of the lower strata of soil in these tracts, the water in wells turns brackish as soon as village tanks are dried up. This complaint about the deficient water-supply is a chronic one but has lately received the attention of Government and about four thousand rupees a year are given as Government grant to the District Local Board for the improvement of the water-supply.

INDUSTRY

There are five spinning and weaving mills in Broach and thirty-two gins and eleven cotton presses in the district. Broach city is the only big industrial centre. The city population according to the census of 1921 is 41,341. In the five cotton weaving and spinning mills the daily average of hand employed is nearly three thousand five hundred. The workmen are enrolled employees generally paid monthly. This being the case there is practically no chance of casual day-labourers being employed therein and no relief to outsiders in consequence is available. Outside the Broach city, there are ginning factories and cotton presses in the district at Ankleshwar, Broach, Jambusar and Palej and ginning factories alone at Amod, Honsot and Chamargaon. They work in the season only (February to May). Most of the labourers employed are imported from Kathiawar and Nawsari side and remain attached from year to year to the factories in which they work. Cotton is the principal local crop and when it fails, these factories do not work properly and consequently no relief to casual labourers can be expected from them.

COMMUNICATIONS

The sea ports afford excellent facilities for bringing in supplies of food and fodder in time of famine. The main B. B. & C. I. Railway line runs through the district and a branch light railway—the Broach-Jambusar Railway—now serves the talukas of Amod and Jambusar. The out-lying areas of Jambusar

and Vagra which are the most liable to scarcity are about fifteen miles from the railway and connected therewith by black soil tracts. The Provincial roads in the district are :—

		Length in miles.
Road from Sahol to Honsot	..	11
Road from Honsot to Ankleshwar	..	12
Road from Ankleshwar to Borbhata	..	3
Road from Broach to Jambusar	..	29
		55

There are also small metalled roads in the district constructed and maintained by the District Local Boards, the total length of which is about twenty-six miles. All parts of the district are thus accessible for relief purposes.

POPULATION

The figures of the six Imperial censuses are given below :—

1872	..	350,322	1901	..	291,763
1881	..	326,930	1911	..	306,717
1891	..	341,490	1921	..	307,745

A severe epidemic, which followed the scarcity of 1876-77, resulted in the population of 1881 showing a decrease of seven per cent., as compared with the population of 1872. A decade of normal seasons from 1881 to 1891 increased the population by four per cent., but the famine, plague and cholera of the next ten years reduced the numbers by fifteen per cent.; and the population of 1901 was seventeen per cent. less than that of 1872. The population of 1911 shows an increase of five per cent. over that of 1901 and the normal seasons between 1901 and 1911 are responsible for it. The population of 1921 shows an increase of 1,028 souls over that of 1911, that is to say, it was practically stationary.

LANGUAGE

Gujarati is the vernacular of the district and is spoken by over ninety per cent. of the population. Hindi (Hindustani) is spoken by about six per cent. As elsewhere in Gujarat, the language of Gujarat Hindu converts to Islam is Gujarati.

RELIGION

The population of the district according to the principal communities is—Hindus 227,231, Jains 3,255, Parsis 2,221, Christians 2,618, Musalmans 69,988 and others 2,432, making a total of 307,745.

BROAD OCCUPATIONS

Speaking broadly 202,573 persons or 65·8 per cent. of the population are supported by Agriculture. Industry supports 43,391 persons or 14·1 per cent.; Commerce 23,355 persons or 7·6 per cent., the Professions and Liberal Arts 8,720 persons or 2·1 per cent. while the remaining 29,706 persons or 9·7 per cent. have to follow various occupations to earn their livelihood.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district mainly according to occupations but in a few cases according to castes, based on the census of 1921. The figures represent both workers and their dependents.

Pasture and Agriculture.—Of the total population of 207,120 supported by pasture and agriculture, ordinary cultivators number 122,651, farm servants and field labourers 69,340 while 10,368 persons are dependent on income from rent of agricultural land. Among persons engaged in the raising of farm stock, herdsmen, shepherds and goatherds 2,437 and cattle and buffaloe breeders and keepers 1,407 are the most numerous. Sheep, goat and pig breeders number 633. As a result of the good soil of the district and the high prices fetched by cotton and grains nowadays the condition of the agricultural classes is generally fair. Persons engaged in the raising of farm stock are also in a fair condition, as there is a fair amount of fodder in the district and milk, butter, wool, etc., bring in good profits.

Fishing supports 1,327 persons. Their condition is fair, as fish find a ready market in the district.

Industry.—The textile industry composed of weavers and other workers in cotton, wool, silk, etc., at home and in factories is by far the most important supporting 16,643 persons. The wood industry includes mainly the carpenters and joiners 2,544, and basket-makers and workers in bamboos, etc., 182. In the metal industry workers in iron number 1,244, while those in brass, copper, etc., number 229. Potters number 2,836 and brick and tile makers 612. In the food industry the most important are manufacturers of vegetable oils 1,734, rice pounders and flour-grinders 601, grain-parchers 276, sweetmeat-makers 201, butchers 488 and toddy-drawers 223. The building industry mainly consists of brick-layers and masons 1,920 and stone cutters and dressers 276. Under "Miscellaneous" industries may be mentioned the barbers 2,491, shoe-makers 1,167, washermen 728 and tailors 2,126. Generally speaking the condition of persons engaged in industry is mostly fair as nowadays they get ample work on reasonable wages.

Trade.—The trade in food stuffs (excluding hotels) heads the list. It supports 11,044 persons, the most important among which are the grocers and sellers of oil, salt, condiments and spices, etc., 4,403, grain and pulse dealers 4,287, sellers of milk, butter, fish, poultry, etc., 892 and dealers in hay, grass, and fodder 411. The trade in piece-goods and textiles maintains 2,616 persons. Trade in fuel such as firewood, cow-dung cakes, etc., affords the means of livelihood to 804 persons. Traders as a class are secure from famine.

Professional Beggars (2,173).—Though the condition of some of them is not altogether satisfactory, owing to their migratory habits, they may tide over a year of famine without State help.

Depressed Classes.—These include *mahars* and *dheds* 14,269, *bhangis* 5,641 and *chambhars* 1,444. *Mahars* are village servants, sweepers in municipal towns, etc. *Bhangis* are scavengers in municipal towns while *chambhars* are leather-workers. A few of the depressed classes may need relief in times of distress.

Brahmans (10,481).—They are mostly writers, priests, Government servants, money-lenders, petty-traders, etc., and are quite secure from famine.

Musalmans (69,988).—They follow various occupations. Some are cultivators, some cotton cleaners, a few traders, oil-pressers and dyers while a few again are priests or spiritual guides, horse dealers, butchers, etc., etc. Some of the Musalmans may need help in times of severe famine.

Parsis (2,221).—They are mostly found in Broach city and Ankleshwar. Many hold land and as a class they are well-to-do.

Christians (2,618).—They are found mostly in Broach, Ankleshwar and Jambusar talukas. As a class they are fairly well off.

ECONOMIC CONDITION

The population depends almost entirely upon agriculture. The *Kanbis* are the principal cultivators. They are most prosperous in the north. Among them the *Patidars* are specially intelligent and respectable class who enjoy much prosperity. Among Musalman cultivators the *Bohras* are numerous and thriving, particularly in the Broach taluka. They are hardworking, intelligent and independent and adventurous enough to emigrate to other parts of the world. The *Rajputs* and the coast *Kolis* are slovenly cultivators. Below these classes dependent on the land is a stratum of *Bhils* and *Talavias* who do village service and labour. The landlord classes are mostly *Brahmans*, Parsis and *Vanias*. The agricultural population, in spite of the succession of bad years, is fairly prosperous and their prosperity is visible in the number of good and comfortable houses in the district. Debt, however, is common, the *Patidars* wasting money in caste dinners, the *Bohras* in litigation, and the *Kolis* and *Bhils* in drink.

Before the famine of 1899-1900 it was not the custom to store grain or fodder but it is now not uncommon to find a year's supply kept in reserve.

Migration.—Generally speaking labour is scarce now a days in this district. For this reason, in a year of scarcity, people ordinarily seek labour near their homes. They would pull on with such labour as might be available at their villages and go content with smaller wages rather than move out to distant places for better wages.

The gross area cropped averaged 579,000 acres for the ten years preceding the great famine of 1899-1900. The area cropped in 1922-23 of which the details are given in tables is nine per cent. above this.

The effects of the famine on the agricultural stock have been more severely felt. Since 1886 cattle have fallen from 141,000 to 137,000. Plough oxen would, however, appear to be sufficient. Sheep and goats have decreased by twenty-four per cent. since 1891.

The area of the average holding varies from thirteen acres in Vagra to ten acres in Jambusar. The average assessment for fully assessed land comes to Rs. 3-11-1 per acre.

LIABILITY TO FAMINE

The district may be said to have been free from acute distress during the thirty years preceding the famine of 1899-1900. There were six years of scarcity almost amounting to famine earlier in the century. Of these one in 1812, was due to the ravages of locusts; one in 1819 to excessive rain, one in 1835 to frost, and three in 1838, 1840 and 1868 to either total or partial failure of the rainfall. These last three failures of rain were serious enough to force the cultivators to drive their cattle to graze in the hills and many villages were for the time deserted.

The district is, therefore, not liable to chronic famine. Years of partial drought have been numerous. To produce actual famine the rainfall must be

deficient, and it must cease before September. Even when the rainfall is only half the normal, it will not produce famine if it is so distributed that a substantial portion falls in September and October. In such a case the cotton and *jowar* may be poor, but they will not totally fail.

With so small and compact a district it is difficult to make a distinction of any practical value between tracts more or less liable to famine. The famine of 1899-1900 affected practically the whole district. In that season the tract south of the Narbada received the most rain and had the best outturn but it is not certain that it would always be favoured in another general failure of the monsoon. In 1911-12, 1918-19 and 1920-21 the talukas which suffered most were Jambusar, Vagra and Amod.

The Bara or Bahara Tract.—The seaward portion of the district, lying to the west of a line from Saroda in Jambusar to Sahol in Hansot, possesses on the whole the poorest soil and is the tract specially liable to famine condition on account of partial failures of the rains. This liability is however less the result of climatic than of soil conditions, such as deposits of salt dust blown from the coast and water logging in places. Moreover the tract is low-lying and flat and irrigation on a large scale would not be of any advantage. These lands are in the occupation of inferior cultivators, mostly *Kolis*. In the partial failure of the crops in 1900-1901 it was practically only in this tract and chiefly in the Jambusar and Vagra *Bara* that any persons resorted to relief works. As already remarked, this tract suffers annually from want of fresh water, as the wells turn brackish in the hot season. Digging deep wells does not improve the supply as the water obtained is salt and unfit to drink. With a deficient monsoon the question of drinking water is as pressing as that of the food-supply, and might in time of great scarcity, render it necessary for the people to emigrate with their cattle. The possibility of reducing water-logging in part of Vagra taluka by improved drainage is under consideration. A number of drains for this purpose were made at the end of last century, but they are only partially effective.

FORMER FAMINES

The monsoon of **1899** failed practically at the end of June and the crop outturn was estimated at 1·3 per cent. of the normal. At the height of the distress 42 per cent. of the population were in receipt of relief.

In **1900** the rainfall was both deficient and unseasonable. There was no rain in June and insufficient rain in July while the August fall was about three times the normal. There was no rain after September. The crop outturn was half the normal. Distress was only severe in the west.

In **1901** the rainfall though deficient was fairly well distributed. Relief works which had been closed in July 1901 had to be re-opened in December, on a small scale, for eight months.

In **1911** the rains in July and August were in serious defect. September rain was also inadequate. Jambusar and Vagra talukas and half of Amod only were affected. No relief works were opened. Broach-Jambusar Railway construction work was proceeding the whole of this year which provided relief generally to the people of the affected areas. There was scarcity of fodder and water-supply. Crops totally failed in the affected areas. In the rest of the district the crop outturn was half the normal.

In **1918-19** the rainfall was deficient. August rain was inadequate. There was practically no rain in September and October. Jambusar, Vagra and Amod were the worst affected areas. In the *Bara*-tract nothing could be sown for want of rain. Village works were opened by Government for relief purposes in February and closed in July. Gratuitous relief was also administered to the needy; the highest number of relief workers exclusive of dependents and dole recipients was 1,672 and was reached in May 1919.

In **1920-21** the rainfall was inadequate. Late rains failed in Jambusar, Vagra and Amod. The outturn of crops ranged from one-eighth to one-quarter of the normal. Village works were opened by Government for relief purposes in April and closed in July. Gratuitous relief was given by grain dole. *Tagavi* also was given out very freely. In this famine the highest number of relief workers which amounted to 1,206 was reached in July 1921.

FORECAST OF RELIEF WORKERS

In the famine of 1899-1900, the greatest number of relief workers was 106,000 persons including 14,000 dependents. In the two recent famines, however, this number was less than two thousand in 1918-19 in which year the famine was nearly as severe as that in 1899-1900, while in 1920-21 the number amounted to only twelve hundred persons. Evidently this very appreciable reduction in the number of relief workers is due to the changed economic conditions.

BROACH STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and Area of Villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which Agricultural Statistics are available. Villages.	Area in Acres.	Percentage of previous column on the gross area.	Area Cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area Uncultivated. Available for Cultivation.	Not available for Cultivation. Forest.	Not available for Cultivation. Other.	Total.	Deduct area cropped with irrigation more than once.	Net Irrigated Area.
		No.	Area in square miles.	No.	Area in square miles.	No.	Area in square miles.	No.	No.	Rs.	No.	Acres.		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Broach ..	96	238	9	13	105	251	110,133	438	5,42,299	96	151,781	94·6	69	119,257	6,596	126,422	3,681	..	21,678	25,359	..	72
2	Ankleshwar ..	101	301	3	6	104	307	71,023	231	4,51,369	101	193,043	98·1	457	138,188	2,266	140,911	5,825	..	46,307	52,132	..	..
3	Hansot P. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Vagra ..	69	344	1	3	70	347	29,289	84	2,81,516	69	220,311	98·9	9	116,657	10,823	127,489	5,726	..	87,096	92,822	..	..
5	Amod ..	50	169	3	7	53	176	34,993	193	2,76,464	53	108,339	96·2	13	84,798	3,932	88,743	430	..	19,156	19,596	..	..
6	Jambusar ..	81	381	2	6	83	387	62,257	169	4,26,487	81	242,477	98·4	373	151,706	5,989	158,068	10,668	..	73,741	84,409	..	..
	Total ..	397	1,433	18	35	415	1,468	307,745	209	19,78,135	400	915,951	97·5	921	611,106	29,606	641,633	26,330	..	247,988	274,318	..	..

No.	Taluka.	Irrigation Abstract, 1922-23. Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other Cereals and Pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net Irrigated Area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Broach ..	..	..	..	72	..	72	..	..	..	3	..	..	..	3	20	..	46	72	..	72
2	Ankleshwar ..	..	..	..	446	..	446	1	2	..	..	..	..	..	30	234	..	180	447	1	446
3	Hansot P. ..	..	..	..	11	..	11	..	..	..	..	..	..	..	..	10	..	1	11	..	11
4	Vagra ..	..	..	..	9	..	9	..	..	..	..	..	..	..	..	5	..	4	9	..	9
5	Amod ..	..	..	..	13	..	13	..	..	..	..	..	..	..	..	6	..	7	13	..	13
6	Jambusar ..	..	203	..	170	..	373	203	..	..	..	..	..	..	3	107	..	60	373	..	373
	Total ..	..	203	..	721	..	924	204	2	..	3	..	..	..	36	382	..	298	925	1	924

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and Area of Villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Density per square mile.	Land Revenue.	Area for which Agricultural Statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area Cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area Uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Total.	Deduct area cropped with irrigation more than once.	Net Irrigated Area.
		No.	Area in square miles.	No.	Area in square miles.	No.	Area in square miles.	No.	No.	Rs.	No.	Acres.		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Broach ..	96	238	9	13	105	251	111,430	384	5,42,346	96	151,777	94·6	433	110,915	14,544	125,892	4,195	..	21,696	25,885	..	433
2	Ankleshwar ..	101	301	3	6	104	307	68,931	224	4,48,049	101	193,106	98·0	200	132,897	6,826	139,923	6,763	..	46,420	53,183	..	200
3	Vagra ..	69	344	1	3	70	347	30,692	100	2,82,268	69	220,306	98·9	21	59,181	68,556	127,760	5,482	..	87,064	92,546	..	21
4	Amod ..	50	169	3	7	53	176	35,020	199	2,76,127	53	112,638	100·0	44	78,299	14,296	92,639	400	..	19,599	19,999	..	44
5	Jambusar ..	82	381	2	6	84	387	60,644	156	4,24,303	82	243,837	98·4	390	139,006	18,168	157,564	11,082	..	75,191	86,273	..	390
	Total ..	398	1,433	18	35	416	1,468	306,717	209	19,73,093	401	921,664	98·3	1,088	520,298	122,392	643,778	27,922	..	249,964	277,886	..	..

No.	Taluka.	Irrigation Abstract, 1918-19. Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net Irrigated Area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Broach ..	..	..	..	107	326	433	..	5	..	..	..	..	..	1	47	..	391	444	11	433
2	Ankleshwar ..	..	..	..	200	..	200	..	1	..	..	..	..	..	30	90	..	89	210	10	200
3	Vagra ..	..	..	..	21	..	21	..	1	..	..	..	..	..	..	4	..	16	21	..	21
4	Amod ..	..	..	..	44	..	44	..	..	..	..	..	..	..	..	5	..	39	44	..	44
5	Jambusar ..	..	..	..	390	..	390	..	..	..	1	1	..	..	..	29	..	309	390	..	390
	Total ..	..	..	..	762	326	1,088	..	7	..	..	1	..	..	1	31	225	..	844	1,109	21	1,088

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Barley.	Ragi.	Maize.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Math and Kulthi.	Others.	Total.	Orchard and Garden Produce. Vegetable.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil-seeds. Sesame.	Linseed.	Castor-seed.	Ground-nut.	Safflower-seed.	Niger-seed.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A	Ac.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Broach ..	25,963	856	4,820	2,798	..	..	..	774	26	35,237	3,994	135	128	221	16,343	20,821	2,052	351	147	2,550	1,198	1	1,199	55	88	3,486	2	..	81	..	..	296	3,865	..	54,339	10	54,349	8,813	126,977	..	..	126,976
2	Ankleshwar ..	19,311	1,018	1,398	3,447	..	..	..	541	11	25,726	1,640	198	242	96	1,016	3,192	602	96	196	894	326	..	326	112	45	870	..	..	119	..	..	93	1,082	..	36,505	..	36,505	13,558	81,440	448	80,992
3	Hansot P. ..	13,023	713	676	7,525	..	..	..	2	..	21,939	1,039	66	67	46	1,883	3,101	234	83	5	322	277	..	277	77	11	731	..	..	4	..	..	255	990	..	25,541	26	25,567	8,912	61,196	50	61,146
4	Vagra ..	21,413	1,997	312	27,258	..	..	..	156	33	50,269	390	597	83	68	15,814	16,952	241	510	1	752	196	..	196	22	..	1,246	..	..	..	..	..	327	1,573	..	44,702	..	44,702	4,271	118,737	5	118,732
5	Amod ..	14,101	597	1,545	2,782	..	..	..	284	29	19,338	1,598	165	26	438	9,645	11,872	288	135	15	438	138	..	138	32	..	1,176	..	..	4	..	..	71	1,251	..	49,218	8	49,226	6,259	88,554	8	88,546
6	Jambusar ..	11,196	6,532	5,058	15,527	..	..	..	5,228	284	43,825	3,119	725	297	2,488	640	7,269	393	4,669	2	5,064	649	..	649	121	3	4,749	..	..	1	..	..	497	5,247	..	88,169	114	88,283	5,372	155,833	151	155,682
	Total ..	105,007	10,813	13,809	59,337	..	..	..	6,985	383	196,334	11,780	1,886	843	3,357	45,341	63,207	3,810	5,844	366	10,021	2,784	1	2,785	419	147	12,258	2	..	209	..	..	1,539	14,008	..	298,474	158	298,632	47,163	632,737	663	632,074

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Barley.	Ragi.	Maize.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Math and Kulthi.	Others.	Total.	Orchard and Garden Produce. Vegetable.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil-seeds. Sesame.	Linseed.	Castor-seed.	Ground-nut.	Safflower-seed.	Niger-seed.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Broach ..	29,406	247	1,040	49	..	..	..	403	..	31,145	1,473	8	14	..	1,111	2,606	870	1,183	178	2,231	45	..	45	75	80	325	..	..	98	..	..	69	542	..	66,431	9	66,440	8,263	111,427	11	111,416
2	Ankleshwar ..	39,178	648	1,065	288	..	..	..	948	1	42,128	3,122	26	205	1	298	3,652	666	360	245	1,271	105	..	105	109	52	1,006	..	..	54	..	..	94	1,154	..	65,297	23	65,320	19,341	133,132	205	132,927
3	Vagra ..	24,617	467	13	179	..	..	..	1	..	25,277	36	1	14	..	123	174	41	18	1	60	3	..	3	16	..	115	..	..	..	..	..	98	213	..	39,430	..	39,430	6,029	71,202	6	71,196
4	Amod ..	25,719	133	79	19	..	..	..	37	..	25,977	240	..	..	..	342	582	50	99	9	158	11	..	11	8	..	62	..	..	..	..	..	20	82	..	46,789	5	46,794	6,054	79,666	47	79,619
5	Jambusar ..	26,249	4,639	2,817	61	..	..	..	4,774	128	38,668	1,463	5	1	9	15	1,493	1,754	3,009	12	4,775	48	..	48	54	..	1,764	..	..	..	..	..	121	1,885	..	86,290	24	86,314	6,465	139,702	186	139,516
	Total ..	145,159	6,134	5,014	596	..	..	..	6,163	129	163,195	6,334	40	234	10	1,889	8,507	3,381	4,669	445	8,495	212	..	212	262	132	3,322	..	..	152	..	..	402	3,876	..	304,237	61	304,298	46,152	535,129	455	534,674

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Broach ..	10,735	..	11	70	578	156	1,845	6,041	3,318	5,062	27,816	753	2,325	7,197	5,87	..	1,335	5,496	19·8
2	Ankleshwar ..	16,892	..	45	47	331	..	5,067	6,311	9,263	4,983	41,939	871	4,753	5,908	7,58	..	722	4,309	13·9
3	Vagra ..	8,198	..	11	40	12	..	1,134	3,636	2,379	2,641	18,051	478	728	1,839	3,972	..	686	2,040	27·7
4	Amod ..	6,298	..	5	21	119	14	825	2,934	1,565	2,552	14,338	348	340	1,737	3,473	..	739	1,963	26·0
5	Jambusar ..	13,499	1	21	74	76	1	2,699	7,808	4,212	6,510	34,901	626	1,235	5,418	7,057	1	687	3,575	20·8
	Total ..	55,622	1	93	252	1,116	171	11,570	26,730	19,737	21,753	137,045	3,076	9,381	22,099	27,967	1	14,169	15,383	22·8

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Broach ..	10,735	..	11	70	578	156	1,845	6,041	3,318	5,062	27,816	753	2,325	7,197	5,87	..	1,335	5,496	19·8
2	Ankleshwar ..	16,892	..	45	47	331	..	5,067	6,311	9,263	4,983	41,939	871	4,753	5,908	7,58	..	722	4,309	13·9
3	Vagra ..	8,198	..	11	40	12	..	1,134	3,636	2,379	2,641	18,051	478	728	1,839	3,972	..	686	2,040	27·7
4	Amod ..	6,298	..	5	21	119	14	825	2,934	1,565	2,552	14,338	348	340	1,737	3,473	..	739	1,963	26·0
5	Jambusar ..	13,499	1	21	74	76	1	2,699	7,808	4,212	6,510	34,901	626	1,235	5,418	7,057	1	687	3,575	20·8
	Total ..	55,622	1	93	252	1,116	171	11,570	26,730	19,737	21,753	137,045	3,076	9,381	22,099	27,967	1	14,169	15,383	22·8

BROACH STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For irrigation.	Government Canals. For drinking.	Government Canals. For Cattle and Washing.	Private Canals. For irrigation.	Private Canals. For drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kacha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Tanks. For drinking.	Tanks. For Cattle and Washing.	Other Sources. For irrigation.	Other Sources. For drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Broach ..	..	..	..	..	..	..	16	359	375	578	375	..	..	403	..	3	39
2	Ankleshwar ..	..	..	..	..	..	..	..	293	293	346	328	38	3	187	1	..	28
3	Hansot P. ..	..	..	..	..	..	..	1	30	31	189	424	68	1	191	..	..	20
4	Vagra ..	..	..	..	..	..	..	2	36	38	254	142	1	5	280	..	..	..
5	Amod ..	..	..	..	..	..	..	9	96	105	301	457	..	2	293	..	..	30
6	Jambusar ..	..	..	..	..	..	..	21	326	347	464	293	1,030	10	1,418	2	..	6
	Total ..	..	..	..	..	..	..	49	1,140	1,189	2,132	2,019	1,137	21	2,772	3	3	123

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
	There are no Protective Irrigation Works in this District.							
	Total ..							

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under 5 and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total No.	Average. Total Area.	Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acs.	Acs.	Rs. a. p.	Rs. a. p.
1	Broach ..	5,577	4,170	1,162	58	..	10,967	125,041	11 4	33 15 6	4 11 9
2	Ankleshwar ..	6,168	4,961	1,023	111	4	12,267	139,499	11 4	43 2 6	3 10 5
3	Vagra ..	4,318	3,802	937	116	10	9,183	122,497	13 9	40 6 0	2 14 7
4	Amod ..	3,386	2,349	934	37	8	6,684	92,623	13 8	58 12 10	4 3 10
5	Jambusar ..	7,546	5,480	1,376	130	4	14,536	157,785	10 8	40 10 0	3 12 2
	Total ..	26,995	20,732	5,432	452	26	53,637	642,495	12 0	45 13 2	3 13 3

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per Acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per Head of population including Alienations.
		Acres.	Rupees.	Rs. a. p.	No.	Rs. a. p.
1	Broach ..	105,860	5,04,320	4 12 3	1,07,239	5 8 4
2	Ankleshwar ..	102,022	3,90,589	3 10 5	69,682	7 5 0
3	Hansot P. ..	92,888	2,47,830	2 10 8	28,765	12 14 4
4	Amod ..	74,723	2,57,356	3 7 1	34,993	11 3 8
5	Jambusar ..	92,813	3,48,669	3 12 1	61,525	9 10 4
	Total ..	473,306	17,48,764	3 11 1	3,02,205	8 2 2

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
	There are no Protective Irrigation Works in this District.							
	Total ..							

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1	Broach ..	Maximum 1878 ..	..	..	..	0·08	0·12	6·10	22·89	17·52	13·16	2·98	..	..	62·85
		Minimum 1899 ..	..	..	..	..	..	8·22	0·29	0·68	0·44	..	..	..	9·63
		Average ..	0·18	0·08	0·03	0·03	0·28	7·14	15·69	8·02	6·33	1·49	0·19	0·03	39·69
		Rainfall for 1922-23 ..	0·35	..	..	..	..	7·95	10·58	2·31	8·53	0·94	..	..	30·46
2	Ankleshwar ..	Maximum 1878 ..	..	..	..	..	0·04	8·63	23·03	14·61	16·79	2·67	..	..	65·77
		Minimum 1899 ..	..	..	..	..	..	10·85	0·45	0·79	0·21	..	..	..	12·28
		Average ..	0·15	0·09	0·02	0·01	0·27	7·02	15·19	7·27	5·70	1·61	0·16	0·02	37·51
		Rainfall for 1922-23 ..	0·54	..	..	..	..	10·24	14·51	3·05	15·09	1·35	0·33	..	43·11
3	Hansot P. ..	Maximum 1917 ..	..	..	..	..	3·05	10·42	11·22	6·56	15·33	13·31	..	..	59·89
		Minimum 1899 ..	..	..	..	..	..	9·44	0·07	0·21	0·15	..	..	..	9·87
		Average ..	0·17	0·08	0·05	0·01	0·19	6·56	12·13	6·58	4·67	1·38	0·16	0·06	32·04
		Rainfall for 1922-23 ..	0·32	..	..	0·08	..	9·56	12·88	2·61	5·76	..	..	..	31·21
4	Vagra ..	Maximum 1878 ..	..	..	..	..	..	4·56	20·99	21·29	10·21	..	..	..	57·05
		Minimum 1899 ..	..	..	..	..	..	4·64	0·04	..	0·48	0·03	..	..	5·19
		Average ..	0·11	0·08	0·03	..	0·11	5·63	12·07	6·77	5·08	1·30	0·15	0·06	31·39
		Rainfall for 1922-23 ..	0·43	..	..	..	..	6·32	5·62	2·19	12·72	0·40	..	..	27·68
5	Ilav D. ..	Maximum 1878 ..	..	..	..	..	..	18·21	34·60	27·16	29·89	2·54	..	..	109·40
		Minimum 1904 ..	..	0·86	0·04	..	..	1·94	2·72	1·75	2·82	0·13	..	..	15·24
		Average ..	0·26	0·10	0·04	0·03	0·23	7·60	13·16	6·39	4·21	1·23	0·21	0·03	32·49
		Rainfall for 1922-23 ..	..	1·83	..	..	..	13·73	11·14	2·28	7·72	..	..	..	35·70
6	Amod ..	Maximum 1878 ..	0·02	..	..	..	..	7·01	22·02	23·86	16·27	1·17	..	..	70·35
		Minimum 1899 ..	..	..	..	..	..	2·61	1·02	..	0·87	..	..	..	4·50
		Average ..	0·12	0·06	0·09	0·04	0·15	5·49	13·10	7·71	6·01	1·26	0·15	0·05	34·23
		Rainfall for 1922-23 ..	0·21	..	..	0·35	..	5·43	6·32	2·29	14·49	0·15	..	..	29·24
7	Dahej D. ..	Maximum 1917 ..	..	0·56	..	0·17	1·95	5·27	8·42	6·01	9·43	18·66	..	..	50·47
		Minimum 1918 ..	..	..	..	..	0·27	0·61	2·16	3·02	..	..	..	..	11·21
		Average ..	0·25	0·08	0·02	0·05	0·31	5·80	9·25	6·07	3·33	1·69	0·18	0·17	27·20
		Rainfall for 1922-23 ..	0·47	..	..	0·39	0·05	18·40	7·07	2·83	6·14	0·03	..	..	35·38
8	Jambusar ..	Maximum 1878 ..	..	..	..	0·02	0·10	5·36	20·58	21·35	18·67	1·51	..	..	67·79
		Minimum 1899 ..	..	..	..	..	..	5·69	..	0·03	1·47	0·03	..	..	7·42
		Average ..	0·10	0·07	0·06	0·06	0·14	5·17	12·71	7·29	5·35	1·11	0·15	0·03	32·24
		Rainfall for 1922-23 ..	..	0·29	..	0·34	..	5·12	6·54	1·88	9·68	..	..	..	23·85

Temperature Details (Broach).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1913	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	84	94	102	108	110	108	96	94	100	102	96	90
	,, minimum ..	56	54	60	72	82	76	78	78	76	72	64	58
1914	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	90	92	108	110	110	102	92	92	94	98	98	99
	,, minimum ..	60	56	66	74	84	76	82	80	78	74	64	54
1915	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	92	89	102	110	110	106	110	94	102	96	98	92
	,, minimum ..	54	52	60	76	82	80	80	78	80	72	62	60
1916	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	88	98	110	106	110	104	98	90	100	102	90	86
	,, minimum ..	52	48	70	76	84	76	78	78	78	68	62	60
1917	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	92	98	104	102	102	102	96	92	94	96	92	80
	,, minimum ..	60	58	68	72	72	78	78	78	78	72	60	56
1918	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	92	102	104	109	108	100	98	96	105	100	100	
	,, minimum ..	52	58	72	64	81	81	80	79	80	80	66	62
1919	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	100	102	104	112	112	108	98	96	100	96	98	101
	,, minimum ..	58	58	82	75	80	78	79	80	78	79	60	56
1920	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	98	104	106	112	106	108	105	90	106	108	98	90
	,, minimum ..	56	54	70	74	78	76	76	76	80	82	78	62
1921	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	79	94	109	112	114	106	110	86	84	98	100	94
	,, minimum ..	62	62	82	84	82	82	80	78	78	72	60	60
1922	Mean maximum ..	Details not available.											
	,, minimum ..												
	Absolute maximum ..	86	92	102	102	112	106	94	90	95	98	88	94
	,, minimum ..	56	60	70	82	82	80	76	76	78	80	80	58

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Wheat.	Rice.	Tur-Dal.	Jowari-Kadbi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Broach ..	25	17	17	16	75	59	0 14 2	0 4 7	0 6 5
	Non-headquarter towns.									
2	Ankleshwar ..	26	17	18	17	54	56	0 13 8	0 4 11	0 3 8
3	Hansot Peta ..	26	18	18	18	142	126	0 12 0	0 5 2	0 4 0
4	Vagra ..	24	16	15	16	85	46	0 11 1	0 4 2	0 4 2
5	Amod ..	25	17	16	18	107	56	0 12 6	0 3 11	0 4 3
6	Jambusar ..	26	17	16	17	76	47	0 11 7	0 3 10	0 4 3
	Average of the Non-headquarter towns..	25	17	17	17	93	67	0 12 2	0 4 5	0 4 1

Prices, 1922-23.

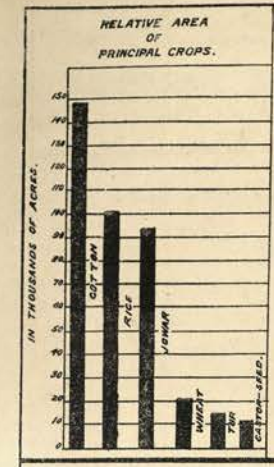
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Wheat.	Rice.	Tur-Dal.	Jowari-Kadbi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Broach ..	20	11	10	10	40	40	1 8 0	0 7 4	0 5 4
	Non-headquarter towns.									
2	Ankleshwar ..	19	10	11	11	46	80	1 8 0	0 10 0	0 8 0
3	Hansot Peta ..	22	11	11	11	167	107	1 0 0	0 8 3	0 6 0
4	Vagra ..	24	12	10	10	91	50	1 8 8	0 4 4	0 4 4
5	Amod ..	20	12	11	11	..	20	1 11 4	0 10 0	0 7 2
6	Jambusar ..	23	13	10	10	128	128	1 8 0	0 12	0 10 0
	Average of the Non-headquarter towns..	22	12	11	11	108	87	1 7 2	0 11	0 7 6

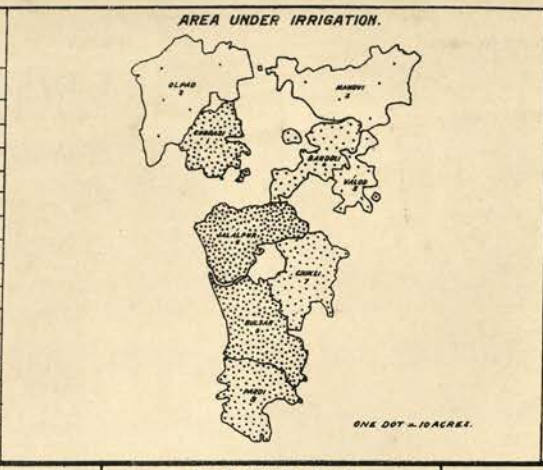
Famine Relief—Average Daily Number.

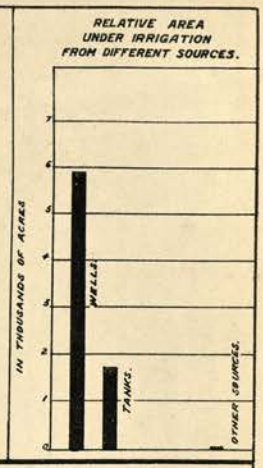
Month.	1911-12. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
January ..							..	..	26	26	9	9	..	..	..	..	..	..
February ..							48	..	275	323	9	9	..	..	..	..	..	..
March ..							606	..	1,352	1,958	9	9	..	..	..	..	..	..
April ..							979	..	2,122	3,101	9	9	..	..	355	355	13	13
May ..	No Relief Works opened.						1,315	..	3,855	5,170	9	8	..	..	610	610	11	11
June ..							424	..	4,158	4,582	9	8	..	..	725	725	10	9
July ..							78	..	4,001	4,079	9	8	..	..	982	982	9	8
August ..							..	..	2,322	2,322	10	11	..	..	..	..	9	8
Average for the period ..							431		2,261	2,692	9	8	518		1,471	1,989	10	9

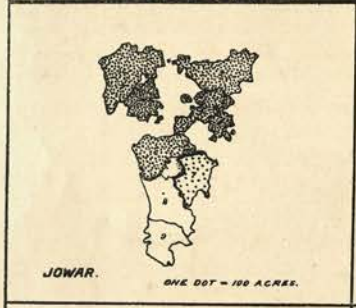
SURAT DISTRICT

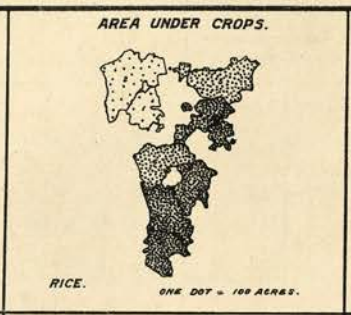
SURAT DISTRICT.

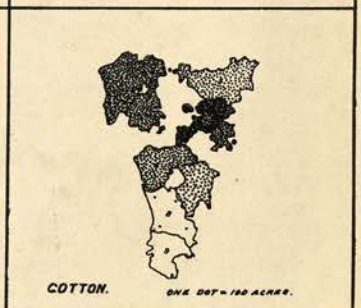


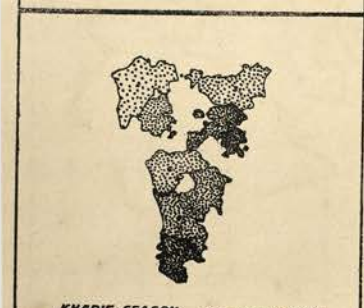


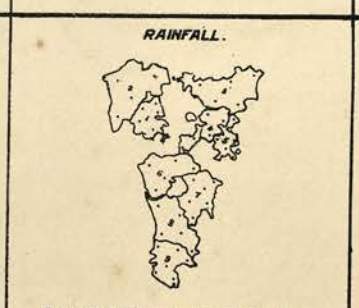


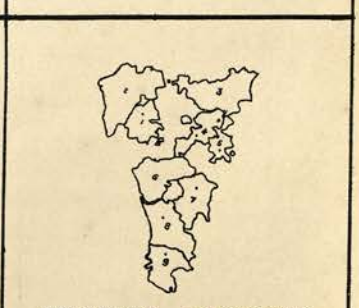












SURAT DISTRICT

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

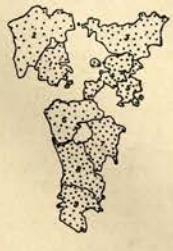
INTENSITY OF FAMINE IN 1911-12.

INTENSITY OF FAMINE IN 1918-19.

INTENSITY OF FAMINE IN 1920-21.

NUMBER OF CATTLE.

1909-10



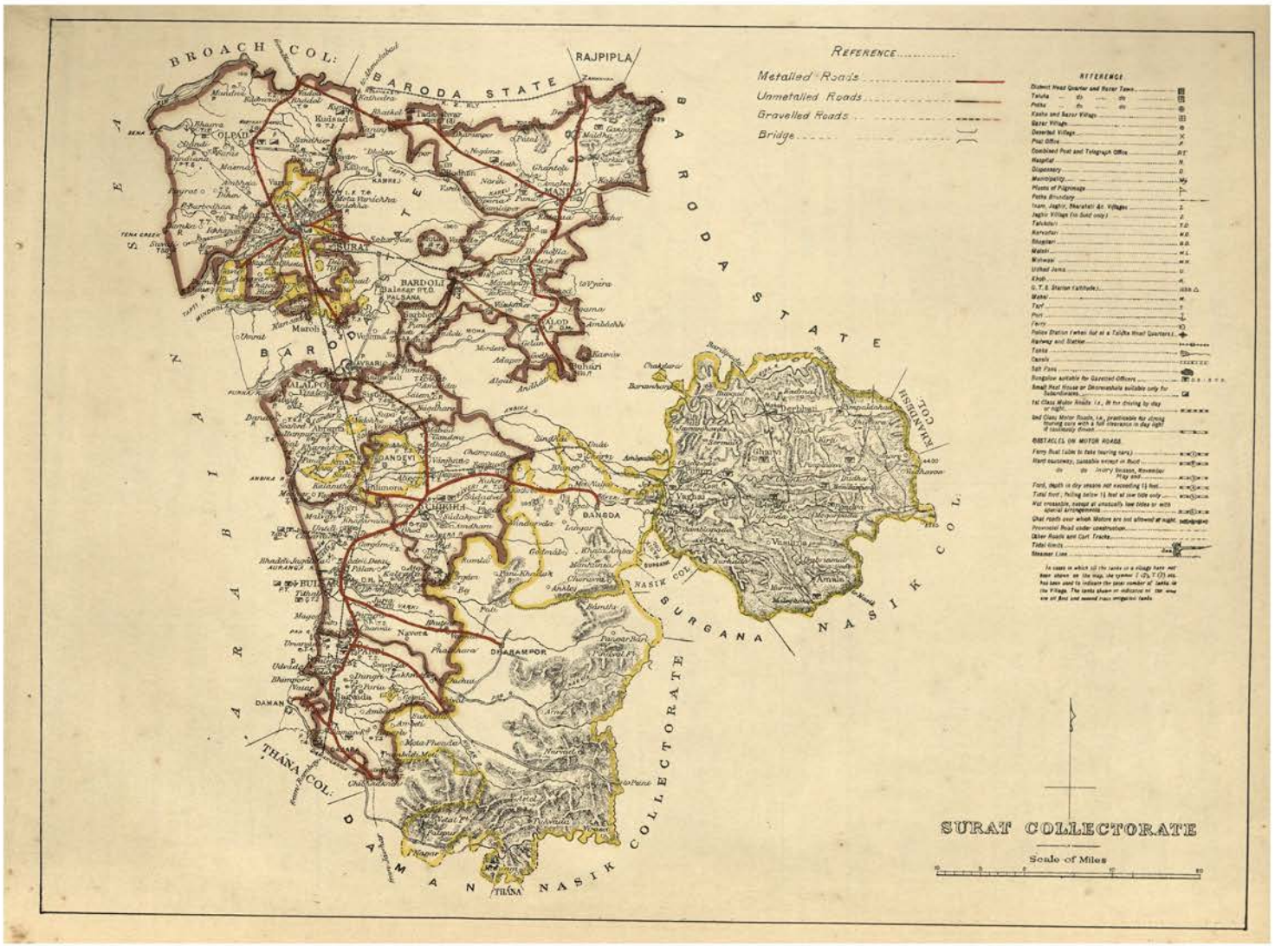
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


BROACH COL:
BARODA STATE
RAJPIPLA
ARABIAN SEA
BARODA STATE
BARODA
NAVSARI
SURAT
BARDOLI
PALSANA
OLPAD
MANDVI
KAMREJ
KIM
MAHUVA
SONGEVI
BILIMORA
GANDEVI
VANSDA
DANGDA
BULSAR
DHARAMPOR
DAMAN
THÁNA COL:
THÁNA
NASIK COL:
SURGANA
NASIK COL:
RAMNAGAR
Ghoti
Vaghai
Ambhai
Mahuvas
Reference.....
Metalled Roads.....
Unmetalled Roads.....
Gravelled Roads.....
Bridge.....
REFERENCE
Chief Head Quarter and Outer Town.....
Taluka ... do ... do .....
Peths ... do ... do .....
Kasba and Bazar Village.....
Bazar Village.....
Deserted Village.....
Post Office.....
Combined Post and Telegraph Office.....
Hospital.....
Dispensary.....
Municipality.....
Places of Pilgrimage.....
Peths Boundary.....
Inam, Jagir, Bhaiachi &c. Villages.....
Jagir Village (no Sand only).....
Talukdari.....
Karvatkari.....
Bhagdari.....
Mahali.....
Mahwasi.....
Utbad Jama.....
Khoti.....
G. T. S. Station (altitude).....
Mahal.....
Turf.....
Port.....
Ferry.....
Police Station (when not at a Taluka Head Quarters).....
Railway and Station.....
Tanks.....
Canals.....
Salt Pans.....
Bungalow suitable for Gazetted Officers.....
Small Rest House or Dharmashala suitable only for Subordinates.....
1st Class Motor Roads i.e., fit for driving by day or night.....
2nd Class Motor Roads, i.e., practicable for driving touring cars with a full clearance in day light if cautiously driven.....
OBSTACLES ON MOTOR ROADS
Ferry Boat (able to take touring cars).....
Hard causeway, passable except in flood.....
do do during Season, November to May end.....
Ford, depth in dry season not exceeding 1½ feet.....
Tidal flood, rising below 1½ feet at low tide only.....
Not crossable, except at unusually low tides or with special arrangements.....
Ghat roads over which Motors are not allowed at night.....
Provincial Road under construction.....
Other Roads and Cart Tracks.....
Tidal limits.....
Steamer Line.....
In cases in which all the tanks in a village have not been shown on the map, the symbol ⊥ (T), T (T) etc. has been used to indicate the total number of tanks in the Village. The tanks shown in outline in the area are first and second class irrigation tanks.
SURAT COLLECTORATE
Scale of Miles

SURAT

POSITION AND AREA

Surat district lies between 20° 17′ and 21° 28′ north latitude and 72° 35′ and 73° 29′ east longitude and covers an area of 1,653 square miles. It is bounded on the north by Broach district and the Indian State of Baroda; on the east by the States of Baroda, Rajpipla, Bansda and Dharampur; on the south by Thana district and the Portuguese territory of Daman; and on the west by the Arabian Sea.

PHYSICAL FEATURES

The district forms an alluvial plain stretching from north to south for about eighty miles, and with a gradual slope from east to west. In the north along the delta of the Tapti, the plain stretches from east to west for about sixty miles, but it gradually contracts till in the extreme south its breadth is about fifteen miles.

There are few hills. Though in places undulating sharply and in others rising into rounded eminences the surface of the district is, on the whole, seldom raised above the average elevation of one hundred and fifty feet. Except the Kim and the Tapti in the north, there are no rivers of any great size. The deep navigable tidal estuaries of the southern streams are however of importance in the coasting trade.

The district is divided into three belts running from north to south, parallel to the line of the coast. Nearest the sea is a barren stretch of sand drift and salt marsh, behind that a richly cultivated plain, and further east a poorer and more open land rising gradually into a wild tract of hill and forest. These variations in the aspect of the plain are most clearly marked in the north.

Coast line.—Along the coast the tidal waters enter the river openings and, passing behind the small hills of drifted sand which fringe the coast, leave the main courses of the streams and make their way along small winding channels through miles of low-lying country. This large area, over which the tide flows regularly, remains a salt marsh. Other lands generally beyond the reach of the sea are, at times of high springs, covered with a shallow layer of salt water. After the water evaporates the salt laden dust is blown inland and injures cultivation. In the coast tract, with the exception of a few favoured spots the water is brackish and scanty; cultivation is confined within small limits; and the population is engaged in fishing and coast trade.

Central Belt.—The belt of highly cultivated land is broadest in the north; but gradually contracts till it almost disappears in the south. In the north the loam brought down by the Tapti gives a uniformly rich and level aspect to this tract. Further south, along the beds of streams, are plots of most fertile land highly cultivated and rich in trees. Between the streams, on the low uplands which form the water-sheds, the soil is thinner, and the water-supply more scanty. These water-shed tracts are chiefly used for grazing.

Inland Tract.—In the east, beyond the level of rich black soil the land gradually grows poorer. Even where the soil is good, the cultivation is inferior and rude tribes replace a skilled peasantry. In the extreme east even rough tillage disappears, the natural vegetation grows more and more dense, and the land merges into the hills and forests known as the *Dangs*.

The district is divided into three distinct sections by a belt of Baroda territory about fifteen miles broad. One of these in the north-west, includes the rich alluvial lands of the Tapti; the second forms the north-east corner of the district and the third comprises the four southern talukas.

CLIMATE

The climate is healthiest along the coast, where the rainfall is lighter than further inland and the temperature rendered equable by the sea-breezes. In October, when the westerly breezes fail, the climate is least pleasant. The *Dangs*, except at certain seasons, are unhealthy.

RAINFALL

The rainfall is heaviest in the three southern talukas where it averages sixty-six inches. North of the Ambika river which forms for a considerable distance the boundary of Chikhli taluka on the north and of the Jalalpur taluka in the south, the rainfall of the coast talukas (about forty inches) is considerably less than that of the inland talukas (about fifty-three inches). The district is practically immune from a total failure of the rainfall. This is probably due to its vicinity to the sea and to the numerous hill ranges—in Thana, Dharampur, Bansda, the Dangs and Rajpipla—which attract the south-west monsoon clouds and cause them to discharge their moisture.

SOIL

The soils of the district, all more or less alluvial in character, belong to three classes—the black or cotton soil called *kali*; the light soil called *gorat*; and the *besar*, a soil uniting the characteristics of the black and light varieties. Black soil is most common in Olpad and there are other two belts of it, the one along the coast and the other at the foot of the eastern hills of Pardi and Chikhli. *Gorat* soil is commonest near the banks of the Tapti and Ambika and also of the Auranga river which falls into the sea a little north of Bulsar. *Gorat* is the richest soil of the district, producing in rapid succession the most luxuriant crops. Patches of the medium or *besar*—a good and productive—soil are found almost everywhere. Of other soils the marshy lands along the coast known as *khar* and *khajan* have been already noticed. In Pardi the land is more like the soil of the Konkan than of Gujarat.

CROPS

The tables show the distribution of crops in the district. *Jowar* and rice, which are the common food of the people of the district, and cotton, are the most important. The cultivation of rice is found everywhere, though less common in the north-west. *Jowar* on the other hand diminishes in importance as the Konkan is approached, until in Bulsar and Pardi it is almost entirely supplanted by rice, *Nagli* and *Kodra*. The same is true of cotton which is mostly grown north of the Ambika river and more especially in Olpad and Bardoli. As in Broach it is frequently sown as a mixed crop with rice. *Kodra* and *Nagli* are consumed by the poorer classes and are extensively cultivated in the inland talukas and in the south. *Val* (Indian bean) is the most important of the pulses and castor the most common oil-seed. Sugarcane is the staple product of garden land and averages three and a half thousand of acres. It is mainly grown south of the Ambika river. The four northern talukas resemble Broach. Bulsar, Chikhli and Jalalpur have the finest tracts, growing sugarcane and other garden crops. The cultivation in these talukas is very skilful. Pardi taluka in soil, rainfall and cultivation, is really a part of the Konkan. A very large proportion of the total cultivable area is always left under grass for cutting for export and grazing, and *babuls* for firewood.

CATTLE

The district is in the main cultivating and non-breeding district but in the Olpad, Chorasi, Bardoli, Jalalpur and Chikhli talukas *kadbi* is in places plentiful and a fair number of useful Talabda cattle, which have a high reputation, are bred by the cultivators. The *talabda* bullock is generally of medium size and is used chiefly for agricultural purposes. The large muscular bullocks or *hedia* are brought from Northern Gujarat. A third class of bullock, small but hardy and swift, is much used in harness. The cows and buffaloes of the district are much esteemed—the cows for their appearance and buffaloes for their yield of milk. The Bulsar taluka is famous for its breed of *patiri* goats, which are good milkers and are highly prized in Bombay.

The total number of cattle as ascertained at the cattle census of 1919-20 is about four lakhs. Of these plough cattle, milch cattle and young stock are roughly one-third each. Sheep and goats number about one lakh.

FORESTS

The forests are those of the Surat district proper and of the *Dangs* (Surat Agency). The district forest reserves consist of about eighty square miles nearly all of which is in the eastern and hilly half of Mandvi taluka, the rest about five square miles being scattered in small areas over Chikhli, Bulsar, Pardi talukas and Valod peta. They are principally teak pole forests which on the flatter areas are very fine but on the higher hills very poor. There is a good mixture of the better class jungle woods and a lot of inferior soft woods as well. *Babul* is locally common and makes a valuable fuel. These forests are treated on a system of improvement fellings by which everything except the most promising trees and poles, are cut out. Bamboos and other minor produce are sold on permits. Privileges are very liberal. Besides grazing their cattle in open forests at a nominal fee the forest villagers are also allowed to remove dead-wood except teak and sissam, free for domestic purposes and also honey, lac, wild fruits, gum and leaves. The regeneration of these forests is effected by the coppice re-growth from the cut stools, the natural poles and seedlings left on the ground and the sowing and planting done by the Forest Department.

The *Dangs* forests are leased to Government on a treaty with the petty Bhil Chiefs who own the tract. There are in the *Dangs* 352 square miles of reserved and 327 square miles of protected forests. The protected forests include all the village sites and cultivation. Here the privileges are so wide that they may be said to include everything except the removal of timber for commercial purposes. In the reserves they are restricted to grazing and the removal of grass, honey, fruits, etc., hunting and fishing. Grazing is free and unrestricted in both the reserved and protected forest, only outside cattle being charged nominal fees.

The *Dangs* forests are very valuable as they contain about thirty-five per cent. of teak, which grows freely and attains a girth of about six feet.

With a light railway, further development of roads, saw mills and concentrated fellings, the Surat and *Dangs* forests promise to give a still more handsome return in future.

LIABILITY TO FAMINE

The Surat district is practically immune from famine and while there have been seasons of more or less general dearth when grain prices were high, no famine has occurred sufficiently wide-spread or intense to seriously affect the condition of the people.

IRRIGATION

There are no Government Protective Irrigation Works in the district nor are there any tracts specially in need of their protection. There are however a large number (1,700) of village tanks from which irrigation is practised. Though of great utility they cannot be considered as protective works as they remain dry in years of scanty rainfall. In such years, however, as in the last famine, those tank beds which retain moisture are utilised for growing crops. The number of irrigation wells is about eight thousand. They are mostly to be found in the south of the district.

DRINKING WATER

There are difficulties as regards drinking water-supply in Olpad, Chikhli and Jalalpur where it is obtained from tanks, and in the interior of Mandvi where it is obtained from surface streams.

TRADE AND INDUSTRIES

Surat is an important centre for silk weaving, gold thread manufacture and embroidery. Cotton weaving is carried on on a large scale in Surat, Bulsar and Bardoli and also at other centres.

The highly skilled silk gold thread and embroidery trades largely produce for export and are not likely to be affected much by local famine condition except through high prices of food stuffs. The textile trades cannot employ unskilled labour.

About 8,000 people are supported by Railway service, 12,000 by service at sea and 3,000 by fishing.

The principal trading centres for the district are Surat, Navsari, Billimora and Bulsar, while Kim, Sayan, Bardoli and Madhi are important minor export stations.

The principal exports are fine textiles, silk and gold thread and embroideries, cotton, grain, grass, pulse, *mahua* fruit, ghee, timber, firewood and bamboos, bricks, salt.

Imports include iron, textiles, manufactured goods of all kinds, sugar.

COMMUNICATIONS

The Bombay Baroda and Central India Railway main line runs through the district parallel to the coast. Besides this, there are three lines running inland (1) Kasamba-Zankhvav line of the Baroda State Railway just north of the boundary of Mandvi taluka; (2) the Tapti Valley Railway running through the centre of Bardoli taluka and (3) the Bilimora-Kalamba Railway passing through the centre of Chikhli and Bansda. It is now being extended to the border of the *Dangs* and a forest Railway is projected for about ten miles further. Practically every part of the district is now within fifteen miles of a Railway station, and all the towns are connected with Railway stations by good cart roads.

There are *bundars* (sea-ports) all along the coast, no two at a greater distance apart than twelve miles.

New roads have been constructed from Mandvi to Zankhvav on the Zankhvav line and from Ahwa the head-quarters of the *Dangs* to Nawapur on the Tapti Valley Line and a fairly complete system of cart roads has been constructed in the *Dangs*. The communication facilities of the district are thus very extensive.

RELIGION

The population of the district 674,351 is composed of 605,133 Hindus, 56,250 Musalmans, 1,858 Christians, as many as 11,051 Parsis and 59 persons of other denominations.

LANGUAGES

Gujarati is spoken by about eighty-four per cent. of the population and Hindi (Hindustani) by nearly three and a half per cent. The Bhil languages mostly spoken by hill tribes in the vicinity of the *Dangs* account for over eleven per cent. Marathi chiefly used in the south, on the borders of the Thana district is spoken by about one per cent.

BROAD OCCUPATIONS

According to broad occupations 399,188 persons or 59·2 per cent. are supported by Agriculture; 111,824 persons or 16·6 by Industry (including mines); 66,918 persons or 9·9 per cent. by Trade and Transport; 18,550 persons or 2·8 per cent. by Professions and the Liberal Arts and 77,871 persons or 10·1 per cent. by various other occupations.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district according to occupations and only in a few cases according to castes. The figures are based on the Census of 1921 and include both workers and dependents.

Pasture and Agriculture.—Of the total population of 415,629 supported by pasture and agriculture 212,291 are ordinary cultivators, 175,798 farm servants and field labourers and only 7,797 persons dependent on income from rent of agricultural land. The persons engaged in the raising of farm stock mostly include the herdsmen, shepherds and goat-herds 10,981, sheep, goat and pig-breeders 3,655 and cattle and buffaloe-breeders and keepers 910.

Fishing is an important industry in coastal areas and supports 3,214 persons.

Industry.—As already noted the textile and weaving industry including workers in cotton, wool, silk, gold and silver thread, at home and in factories, stands first, workers and dependents numbering 32,000. Carpenters, turners and joiners 10,015 and basket-makers and other workers in bamboos, canes, etc., 2,068 chiefly account for the wood industry. In the metal industry, workers in iron 2,612 and workers in brass and copper 933 are the most important. Potters number 4,872 and brick and tile makers 3,658. In the food industry rice-pounders and flour-grinders 1,474, manufacturers of vegetable oils 3,470, butchers 1,068 and toddy-drawers 1,455 deserve a mention. In the building industry the brick-layers and masons number 4,697 while of stone-cutters and dressers there are 725 of them. Under 'other' industries tailors 13,670, shoe-makers 3,599, washer-men 1,431 and barbers 4,690 are the most prominent. As persons engaged in 'industry' get now a days generally sufficient work and decent wages their condition is on the whole fair.

Trade.—Under this head the trade in food-stuffs (excluding hotels) ranks first. Of the total number of persons (18,210) supported by this trade grocers and sellers of oil, salt, condiments and spices, etc., number 5,975; sellers of milk, butter, fish, poultry, etc., number 3,627 while grain and pulse dealers number 6,487. The trade in piece-goods and textiles supports 4,922 persons. Traders as a class are generally secure.

Professional Beggers 2,647 did not require relief in former famines.

Depressed Classes.—These include Mahars, and Dheds 28,699; Chambhars 4,531; Bhangis 1,790 and Mangs 139. Chambhars or shoemakers get enough work and fair return while Bhangis or scavengers get employment in Municipal towns and earn living wages. A few of the other classes are village servants. On the whole few of the depressed classes will need relief.

Brahmans (39,209).—They are mostly priests, Government servants, land-holders, money-lenders, etc., and are quite secure.

Musalmans (56,250).—Among these the Bohoras are most numerous and are chiefly traders and are well-to-do. Some of the Musalmans are also cultivators, Government servants, craftsmen, etc., and are fairly well off.

Christians (1,858) are generally well off.

Parsis (11,051).—The majority of them are found in Chorasi taluka a good many being residents of Surat city. As a rule they are educated and well-to-do.

ECONOMIC CONDITION

With regard to the economic condition of the population it may be remarked that there has been an appreciable extension of industry within the district and its neighbourhood. There are now in the district three spinning and weaving mills, one brass foundry, thirty-two brick factories, two oil-mills and one cement factory which might employ a certain amount of famine labour. Two large mills have also been started at Bilimora and Navasari in Baroda territory immediately adjoining Chikhli and Jalalpur talukas.

The grass export trade to Bombay has greatly increased since the War but in the event of a serious local fodder shortage might have to be controlled.

The work of exploitation of forest areas in the *Dangs*, Mandvi and Dharampur State has developed greatly and some work could probably be provided there, in the healthy working season from December to May.

Bulsar has become an important railway centre while Madhi station on the Tapti Valley line has become an important bazar centre for Mandvi and Bardoli talukas.

There are a great many wealthy or well-to-do persons in Surat, Bulsar, Bardoli and Jalalpur who have made their means by trade in the cities, the far East and Africa and they are always able to spend money on building and improvement when labour is cheap.

Migration.—The people of the areas likely to be most affected in the east of the district do not ordinarily come to the towns for work. The people of the south of the district and the parts near the railway line go to Bombay, Surat, Bulsar, Bilimora and Navasari for work. The *koli* women on the coast go up country to work for railway, road and building contractors. *Kaliparaj* people from all parts except Mandvi and Valod, of the labouring classes go out-side for work. The *Kaliparaj* people who have permanent interests in land do not leave their villages as a rule.

A large number of labourers from Kathiawar and North Gujarat come to Surat district annually as unskilled labourers on private, road and railway works.

As already remarked the district is practically immune from famine. Years of scarcity there have been, but very few as compared with other parts of the Presidency.

FORMER FAMINES

In **1864** and in **1871** there was scarcity in some parts owing to partial failure of the rains. In **1877** tanks and other similar works offered relief.

The severest scarcity in recent times was in **1899,** but there was no famine in the sense the word bore in the more northerly parts of Gujarat. In this year the rainfall was only about half the normal. The rainfall in June was above the average and though the later rain was light and scattered, it was heavier than in North Gujarat and did not cease altogether in August. The eastern parts of the district were most affected by scarcity, particularly the north-east corner in the Mandvi taluka. The Valod Mahal of the Bardoli taluka and the Chikhli and Pardi talukas were only slightly affected. The rest of the district required no aid.

In **1900** there was practically no rainfall in June and none after September. In August it was abnormally heavy. With a crop outturn of fifty-eight per cent. of the normal, however, there was no need of relief works.

In **1901** the rainfall was again deficient and relief was instituted in February 1902.

During the last two decades, there has practically been no famine in the district. The year **1918-19** which was a year of such an acute distress over the most of the Presidency was but a lean year in this district and no relief measures were needed.

FORECAST OF RELIEF WORKERS

With such an immunity from famine and with a wider field for labour owing to the development of forest areas and other industrial concerns within and without the district, the number of persons who will require relief in future famines, is not likely to exceed a few thousands.

SURAT STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Population (1921). Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of col. 5 on col. 4	Area cultivated. Cropped (Net). Irrigated.	Area cultivated. Cropped (Net). Not irrigated.	Area cultivated. Fallows.	Area cultivated. Total.	Area uncultivated. Available for cultivation.	Area uncultivated. Not available for cultivation. Forest.	Area uncultivated. Not available for cultivation. Other.	Area uncultivated. Total.	Area.
		No.	Acres.	No.	Acres.	No.	Acres.	Total.	Density.	Rs.	No.	Acres.		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
1	Chorasi	72	88	11	26	83	114	175,114	1,536	2,50,839	77	65,415	87·9	790	46,751	1,145	48,686	424	3	16,302	16,729	
2	Olpad	131	308	3	4	134	312	54,440	174	5,25,398	132	198,667	90·4	48	124,001	1,416	125,465	2,566		70,236	72,803	
3	Mandvi	153	269	7	11	160	280	51,360	183	1,70,957	153	179,490	96·8	50	102,026	2,802	104,878	12,097	39,888	16,627	68,612	
4	Bardoli	93	144	..	..	93	144	61,292	425	3,48,894	93	92,510	100	436	79,661	934	81,031	123	..	14,356	14,479	
5	Valod P.	44	78	..	..	44	78	20,617	264	1,25,345	44	49,633	100	117	43,220	878	44,215	281	458	4,676	5,415	
6	Jalalpur	68	179	7	7	95	186	79,416	427	3,39,904	85	111,725	94·9	2,116	85,677	1,357	89,150	29,090	..	13,575	42,665	
7	Chikhli	98	144	9	13	61	161	63,821	382	2,24,306	511	104,725	97·8	777	87,878	1,518	90,173	4,075	827	9,656	14,558	
8	Bulsar	96	208	..	..	96	208	96,024	462	2,61,972	96	133,482	100	1,994	94,290	4,766	101,050	11,007	2,500	18,925	32,432	
9	Pardi	79	161	2	2	81	163	66,223	406	1,57,305	80	103,725	99·4	1,683	84,392	5,149	90,548	406	1,220	11,492	13,178	
	Total	814	1,589	35	63	849	1,652	674,351	408	23,84,918	821	1,033,427	97·7	7,335	727,899	19,965	755,199	60,489	44,896	172,843	278,228	

Irrigation Abstract, 1922-23.

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Districts. area cropped with irrigation more than once.	Irrigation. Net irrigated area.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Chorasi	..	..	81	909	4	990	79	3	..	..	..	..	..	7	740	..	192	1,021	31	990
2	Olpad	..	..	36	12	..	48	36	..	..	..	..	..	..	..	10	..	..	46	..	48
3	Mandvi	..	..	..	50	..	50	..	..	..	..	..	..	..	4	33	..	13	50	..	50
4	Bardoli	..	..	..	436	..	436	..	6	..	..	..	..	..	83	245	..	102	436	..	436
5	Valod P.	..	..	85	304	2	117	85	..	..	..	..	..	..	9	14	..	13	117	..	117
6	Jalalpur	..	..	1,053	1,174	..	2,227	974	79	..	..	..	..	..	37	415	..	187	2,227	..	2,227
7	Chikhli	..	..	37	229	15	281	37	..	..	..	..	..	..	4	215	..	25	281	..	281
8	Bulsar	..	..	310	1,674	10	1,994	216	..	..	..	..	..	..	..	545	..	211	1,994	..	1,994
9	Pardi	..	..	120	887	..	1,007	120	..	..	..	..	..	..	..	217	..	22	1,007	..	1,007
	Total	..	..	1,723	5,896	31	7,650	1,547	93	..	..	..	..	..	2,984	2,263	..	794	7,681	31	7,650

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Population (1911). Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of col. 5 on col. 4	Area cultivated. Cropped (Net). Irrigated.	Area cultivated. Cropped (Net). Not irrigated.	Area cultivated. Fallows.	Area cultivated. Total.	Area uncultivated. Available for cultivation.	Area uncultivated. Not available for cultivation. Forest.	Area uncultivated. Not available for cultivation. Other.	Area uncultivated. Total.	Area.
		No.	Acres.	No.	Acres.	No.	Acres.	No.	Density.	Rs.	No.	Acres.		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
1	Chorasi	72	88	11	26	83	114	170,191	1,493	2,95,736	77	65,457	87·9	816	46,370	1,520	48,706	428	3	16,320	16,751	
2	Olpad	131	308	3	4	134	312	53,506	171	5,76,040	132	198,583	90·4	66	119,455	5,158	124,699	3,352	..	70,552	73,904	
3	Mandvi	153	269	7	11	160	280	53,027	189	1,95,739	153	173,082	96·6	29	98,423	5,245	103,695	13,473	39,903	16,311	69,387	
4	Bardoli	93	144	..	..	93	144	59,079	410	5,16,689	93	142,136	100	722	123,158	1,315	125,195	465	458	16,018	16,941	
5	Valod P.	44	78	..	..	44	78	27,270	350	..	..	..	..	..	..	..	..	..	..	..	..	
6	Jalalpur	98	179	7	7	95	186	75,252	405	3,89,019	85	111,774	94·9	1,046	65,014	3,051	69,113	29,077	..	13,584	42,661	
7	Chikhli	98	154	9	13	63	167	62,774	376	2,70,505	61	104,177	97·8	1,208	86,467	2,090	89,765	4,480	827	9,640	14,952	
8	Bulsar	96	208	..	..	96	208	89,404	430	2,97,863	96	133,459	100	2,221	89,739	9,836	100,796	11,274	2,521	18,866	32,663	
9	Pardi	79	161	2	2	81	163	65,606	390	1,68,390	80	103,725	99·4	1,683	85,197	3,490	90,370	491	1,488	11,474	13,453	
	Total	814	1,589	35	63	849	1,652	654,109	396	2,709,387	821	1,032,931	97·6	7,813	712,723	31,703	752,239	62,740	45,200	172,752	280,692	

Irrigation Abstract, 1918-19.

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Districts. area cropped with irrigation more than once.	Irrigation. Net irrigated area.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Chorasi	..	..	5	787	24	816	29	..	..	..	..	..	40	4	592	..	178	846	30	816
2	Olpad	..	..	18	68	..	86	18	..	..	..	..	..	..	..	55	..	13	86	11	86
3	Mandvi	..	..	..	29	..	29	..	..	..	..	..	..	..	1	13	..	15	29	..	29
4	Bardoli	..	..	88	632	2	722	92	55	..	..	..	..	93	110	208	..	204	722	..	722
5	Valod P.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Jalalpur	..	..	90	958	..	1,048	117	17	..	..	..	..	149	152	212	..	417	1,067	19	1,048
7	Chikhli	..	..	135	984	89	1,208	151	6	..	..	..	..	..	1	866	107	86	1,218	10	1,208
8	Bulsar	..	..	490	1,248	253	2,221	387	..	..	..	..	..	..	1,242	352	..	251	2,232	11	2,221
9	Pardi	..	..	650	974	59	1,683	681	..	..	..	..	..	2	788	202	..	10	1,683	..	1,683
	Total	..	..	1,436	6,180	197	7,813	1,475	84	..	..	..	..	243	3,168	1,734	..	1,174	7,878	65	7,813

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mung and Udid.	Math, Kulthi, and Kodri.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.	Oil Seeds. Sesamum.	Linseed.	Rape and Mustard.	Groundnut.	Safflower-seed.	Nigar-seed.	Others.	Total.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Chorasi	15,709	1,520	695	468	..	..	18,388	1,864	117	768	110	1,151	3,990	1,931	355	188	2,474	141	..	141	516	192	65	..	..	187	..	..	200	452	15,247	13	15,260	14,340	55,253	477	55,276
2	Olpad	22,662	4,297	2,993	16,779	..	..	46,731	2,993	1,629	428	956	230	6,236	1,541	626	7	2,174	177	..	177	169	169	451	..	..	68	..	..	652	1,157	35,826	..	35,839	23,941	125,904	4	125,964
3	Mandvi	19,062	203	12,395	1,369	..	4,466	37,074	40,583	2,928	923	2,199	59	7,189	13,295	4,878	61	3,942	198	..	198	52	4	303	..	..	38	..	..	2,615	2,953	19,964	482	20,446	32,619	115,092	9,202	105,890
4	Bardoli	11,639	20	11,485	1,171	..	90	24,405	2,550	68	2,227	79	2,345	7,169	7,158	48	39	7,245	31	..	31	93	109	51	..	..	23	..	..	2,751	2,883	26,097	288	26,385	12,537	90,589	10,580	80,009
5	Valod P.	7,612	..	7,059	208	..	249	15,127	1,216	162	1,149	37	4,808	7,372	5,792	18	..	5,821	..	..	..	16	16	122	..	..	..	..	..	1,296	1,420	12,382	265	12,647	7,062	48,484	5,145	43,339
6	Jalalpur	12,778	7	7,173	79	..	22	20,059	1,187	34	1,694	22	4,434	7,341	4,906	13	148	5,059	10	..	10	372	617	36	..	..	96	..	..	1,409	1,630	18,303	540	18,901	21,938	79,991	7,742	72,249
7	Chikhli	3,209	..	18,525	47	..	956	22,737	1,269	24	1,269	130	3,976	6,668	2,976	16	106	3,098	18	..	18	612	206	26	..	..	..	..	..	1,106	1,132	9,369	541	10,129	17,443	67,643	9,615	58,028
8	Bulsar	67	..	19,362	..	..	2,644	25,227	779	63	568	01	7,386	8,796	7,047	73	487	7,607	22	..	22	1,052	39	191	..	..	..	..	..	928	967	416	595	1,011	60,483	105,354	9,619	95,735
9	Pardi	10	..	17,059	310	..	3,125	4,892	27,996	1,187	402	608	..	6,446	8,845	5,424	..	245	5,669	3	..	3	19	648	81	..	..	1	..	..	730	..	..	571	571	48,273	102,792	6,775	86,017
	Total	93,148	6,039	101,684	20,427	..	13,578	12,927	247,799	13,278	2,335	10,538	517	48,383	75,571	43,653	1,210	1,217	46,080	590	..	590	1,477	3,419	1,170	..	..	470	..	..	11,923	13,563	..	148,019	5,360	151,379	273,965	813,844	59,392	754,452

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse grains (Maize and Ragi).	Others.	Total.	Pulses. Tur.	Gram.	Mung and Udid.	Math, Kulthi.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.	Oil Seeds. Sesamum.	Linseed.	Groundnut.	Safflower-seed.	Nigar-seed.	Others.	Total.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder net cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Chorasi	16,396	737	111	4	12	..	17,260	1,846	6	746	50	493	3,141	988	530	264	1,792	100	2	102	424	4	5	..	..	155	..	..	118	278	18,036	1	18,037	14,008	55,046	140	54,906
2	Olpad	33,561	4,583	181	465	..	..	38,789	2,822	12	1,229	95	922	4,272	96	230	116	442	33	..	33	98	..	181	..	..	29	..	..	136	346	52,055	..	52,057	24,657	120,654	57	120,597
3	Mandvi	21,263	86	6,667	5	1,185	5,082	34,288	5,051	42	1,029	30	567	6,718	434	58	..	492	77	..	77	35	..	219	..	..	94	..	..	981	1,294	27,167	85	27,252	34,180	104,337	1,475	102,862
4	Bardoli	21,015	10	13,594	108	561	130	35,218	1,592	48	893	76	3,282	5,892	878	2	95	975	15	..	15	204	110	50	..	..	116	..	..	556	722	45,934	122	46,056	35,157	124,280	434	123,855
5	Jalalpur	19,549	..	2,801	21	69	120	22,559	940	20	1,612	22	373	2,967	44	..	..	44	25	..	25	475	178	83	..	..	144	..	..	153	380	19,969	241	20,070	24,944	71,697	1,162	70,535
6	Chikhli	3,542	..	17,292	6	1,284	2,369	24,493	1,031	8	199	..	334	1,572	87	..	..	89	12	..	12	77	869	11	..	..	3	..	..	297	311	11,652	234	11,886	50,725	90,034	283	89,751
7	Bulsar	158	..	18,725	..	1,477	5,882	27,242	29	..	13	..	858	900	177	886	11	1,074	276	..	276	223	1,242	48	..	..	..	..	..	520	620	418	442	860	60,781	91,902	598	91,304
8	Pardi	5	..	16,901	405	4,503	7,298	29,112	847	355	808	..	317	2,327	257	1	1	259	1	..	1	73	1,792	73	..	..	1	..	..	1,228	1,302	1	255	256	53,733	87,972	398	87,574
	Total	115,489	5,428	76,072	1,013	10,091	20,881	228,974	14,204	499	5,724	273	7,096	27,793	3,014	955	519	4,488	276	2	278	1,533	3,196	670	..	542	..	..	4,027	5,239	..	175,136	1,347	176,483	297,684	745,672	4,807	740,865

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Cows.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Cows.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Carts. Large, i.e., of over 2 Cattle.	Carts. For passengers.	Carts. For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acres.
1	Chorasi	7,211	15	33	31	2,139	22	3,472	6,300	4,999	3,131	27,361	1,248	1,385	5,324	3,045	70	2,493	3,268	16·0
2	Olpad	12,853	..	41	29	386	..	5,901	7,153	9,124	6,194	40,807	754	5,676	7,086	5,499	..	1,038	3,724	20·3
3	Mandvi	16,079	339	67	48	640	7	10,206	3,928	14,391	5,310	49,215	224	665	11,149	2,412	..	515	2,798	13·3
4	Bardoli	18,096	96	63	883	11	9,247	10,333	14,109	7,741	60,606	248	2,610	14,042	8,335	..	1,901	3,035	15·2
5	Jalalpur	8,395	16	20	457	1	5,389	9,908	8,383	7,289	40,721	108	2,380	8,439	4,532	66	1,332	3,908	16·7
6	Chikhali	15,353	276	28	311	320	8	10,450	6,368	19,747	5,334	51,995	873	3,668	11,846	7,125	129	946	4,717	12·9
7	Bulsar	19,245	980	16	317	737	8	13,703	5,670	18,018	4,912	62,319	125	2,748	12,949	5,570	203	1,066	5,844	10·6
8	Pardi	14,525	3,143	51	19	721	2	12,369	1,648	14,450	1,400	48,308	220	3,037	10,694	7,623	124	1,534	4,031	10·4
	Total	111,127	4,568	304	282	6,283	60	71,236	50,313	97,698	39,311	381,182	2,514	20,462	81,529	51,812	601	10,825	34,125	14·8

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Cows.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Cows.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Carts. Large, i.e., of over 2 Cattle.	Carts. For passengers.	Carts. For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Chorasi	6,969	..	26	29	541	8	2,585	4,543	4,023	2,582	20,417	495	1,250	3,192	2,693	..	877	2,169	17·6
2	Olpad	11,390	3	41	28	3566	1	5,859	7,078	9,084	6,114	40,535	754	3,496	7,084	5,413	..	1,033	3,660	17·4
3	Mandvi	15,522	39	63	43	619	7	10,366	3,841	13,919	5,219	47,682	222	666	10,859	2,187	..	507	2,723	15·2
4	Bardoli	18,078	96	65	883	11	9,247	10,331	14,106	7,741	60,606	248	2,610	14,043	8,255	..	1,901	3,035	15·2	17·9
5	Jalalpur	8,962	11	15	26	445	1	4,945	8,211	8,175	5,218	37,509	104	2,380	8,410	4,032	..	551	2,596	16·7
6	Chikhali	15,353	276	28	311	320	8	10,147	6,034	13,432	5,092	50,164	87	3,425	11,641	6,869	..	127	921	12·9
7	Bulsar	19,702	980	16	318	737	8	13,702	5,670	18,018	4,912	62,319	125	2,748	12,949	5,570	..	203	1,066	10·6
8	Pardi	14,341	3,124	51	19	721	2	12,363	1,646	14,327	1,400	47,892	220	3,029	10,683	7,534	..	124	1,532	3,990
	Total	107,999	4,540	287	2204	4,652	46	69,097	47,416	95,084	37,783	367,124	1,665	20,126	78,462	50,492	..	526	9,093	32,433

SURAT STATISTICAL TABLES—II.

Water Supply—1922-23

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Chorasi	..	..	..	..	..	..	468	1,125	1,171	852	560	22	5	115	4	7	33
2	Olpad	..	..	..	..	..	..	25	182	207	1,118	495	400	41	249	2	81	23
3	Mandvi	..	..	..	..	..	..	3	79	82	870	34	..	2	49	4	2	..
4	Bardoli	..	..	..	..	..	..	3	798	800	1,574	472	52	2	34	7	14	58
5	Valod P.	..	..	..	..	..	..	..	205	211	659	33	4	..	2	2	..	36
6	Jalalpur	..	..	..	..	..	..	10	1,249	1,259	1,308	389	253	18	54	5	11	41
7	Chikhli	..	..	..	..	..	..	25	1,197	1,222	907	4	131	6	9	71	3	81
8	Bulsar	..	..	..	..	..	..	52	1,655	1,707	1,492	58	154	39	84	49	17	4
9	Pardi	..	..	..	..	..	..	153	950	1,103	719	10	70	8	26	5	..	119
	Total	..	..	..	..	..	..	324	7,438	7,762	9,459	2,055	1,086	121	622	145	135	395

Goverament Protective Irrigation Works—1922-23

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
		There are no Protective Irrigation Works in this District.						
	Total ..							

Holdings—1921-22

No.	Taluka.	Number of Holdings. Under and up to 5 Acres.	Over 5 and up to 25 Acres.	25 to 100 Acres.	100 to 500 Acres.	Over 500 Acres.	Total Number.	Total Area.	Average. Area of Holding	Average. Assessment per Holding	Average. Assessment per Acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Chorasi ..	4,283	1,735	124	1	..	6,143	29,966	4·8	32 0 2	5 7 9
2	Olpad ..	6,767	4,966	911	64	..	12,428	115,634	9·3	108 6 4	11 9 1
3	Mandvi ..	2,971	1,308	647	115	8	5,049	99,061	19·6	33 1 8	1 2 11
4	Bardoli ..	4,011	2,086	797	3	..	6,997	32,555	5·1	53 8 6	4 2 5
5	Valod P. ..	2,971	1,174	263	41	..	3,262	36,262	11·1	37 14 4	3 12 5
6	Jalalpur ..	16,413	3,347	114	5	..	20,079	67,297	3·3	16 3 3	4 9 6
7	Chikhli ..	7,528	3,273	597	51	..	11,449	82,917	7·2	52 2 2	7 3 3
8	Bulsar ..	15,824	3,436	455	34	1	19,750	79,534	4·7	13 0 7	2 1 6
9	Pardi ..	5,656	1,903	323	24	..	7,907	47,890	6·5	16 12 9	1 6 3
	Total ..	65,257	22,928	3,931	338	10	92,464	591,116	6·3	24 3 9	2 11 7

Incidence of Assessment—1920-21

No.	Taluka.	Fully Assessed Area. Area.	Assessment.	Incidence per Acre.	Fully Assessed Area including Alienated Land in Government Villages. Population.	Incidence per Head of population including Alienations.
		Acres.	Rupees.	Rs. a. p.	No.	Rs. a. p.
1	Chorasi ..	28,311	1,96,637	6 15 2	175,114	1 6 7
2	Olpad ..	99,687	4,71,207	4 12 7	54,440	9 10 1
3	Mandvi ..	96,015	1,62,156	1 11 10	51,360	3 5 2
4	Bardoli ..	75,881	3,42,452	4 8 2	61,292	5 11 1
5	Valod P. ..	81,846	1,23,628	1 8 2	26,617	4 11 3
6	Jalalpur ..	61,715	2,25,598	3 10 5	79,410	4 5 8
7	Chikhli ..	61,302	2,17,733	3 8 9	63,821	3 6 3
8	Bulsar ..	97,626	2,57,521	2 13 6	96,074	2 11 2
9	Pardi ..	88,227	1,52,833	1 8 1	86,225	2 0 6
	Total ..	710,891	22,40,725	3 2 7	674,351	3 8 7

Goverament Protective Irrigation Works—1918-19

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
		There are no Protective Irrigation Works in this District.						
	Total ..							

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1	Surat ..	Maximum 1878 ..	..	..	..	..	..	13·45	28·06	17·09	28·61	2·10	..	..	89·31
		Minimum 1904 ..	0·50	0·33	..	..	..	3·02	4·25	7·14	3·91	0·88	0·08	..	14·29
		Average ..	0·14	0·07	0·02	0·04	0·24	8·21	16·62	7·11	5·31	1·77	0·20	0·04	39·72
		Rainfall for 1922-23 ..	..	0·59	..	..	..	14·05	14·31	2·27	9·23	0·14	0·13	..	41·22
2	Olpad ..	Maximum 1878 ..	..	..	..	..	..	8·21	21·28	14·91	19·27	1·78	..	..	65·49
		Minimum 1904 ..	..	0·10	..	..	..	0·75	4·12	0·97	2·51	0·08	..	..	9·50
		Average ..	0·17	0·05	0·01	..	0·15	6·75	14·78	6·72	7·11	1·41	0·19	0·05	35·39
		Rainfall for 1922-23 ..	..	0·59	..	..	..	14·98	10·53	1·73	9·25	..	..	..	37·08
3	Mandvi ..	Maximum 1878 ..	..	0·06	..	0·02	..	4·66	38·57	30·71	16·33	2·61	..	..	92·96
		Minimum 1899 ..	0·33	0·16	..	..	0·33	9·16	7·58	1·50	0·38	..	..	..	12·95
		Average ..	0·21	0·08	0·04	..	0·29	8·77	21·11	11·48	9·25	1·54	0·33	0·06	52·10
		Rainfall for 1922-23 ..	..	0·25	0·18	..	..	8·58	19·39	4·04	27·26	1·40	0·75	..	61·85
4	Bardoli ..	Maximum 1878 ..	..	..	..	..	..	9·98	30·43	28·62	11·10	0·38	..	..	80·51
		Minimum 1899 ..	..	..	..	..	0·08	12·67	2·31	2·50	1·15	..	..	..	18·51
		Average ..	0·18	0·09	0·05	..	0·20	8·79	22·05	11·05	7·80	1·60	0·25	0·05	52·11
		Rainfall for 1922-23 ..	..	0·28	0·16	..	..	10·89	22·86	4·19	22·97	..	..	..	61·35
5	Valod P. ..	Maximum 1878 ..	..	..	..	..	..	5·85	33·25	29·12	22·22	2·41	..	..	92·85
		Minimum 1899 ..	..	..	..	..	0·08	11·10	1·94	2·36	0·76	..	..	..	16·24
		Average ..	0·20	0·11	0·08	0·01	0·16	8·36	22·55	12·88	7·86	1·31	0·33	0·34	53·09
		Rainfall for 1922-23 ..	..	0·44	0·13	..	..	11·77	25·25	4·09	20·50	1·00	0·51	0·10	63·79
6	Jalalpur ..	Maximum 1878 ..	..	..	..	..	..	10·18	39·65	20·14	38·64	2·23	..	..	110·84
		Minimum 1918 ..	..	..	..	..	0·86	1·25	4·22	6·43	0·58	..	..	..	13·84
		Average ..	0·16	0·10	0·04	..	0·15	8·85	19·84	9·05	9·32	1·57	0·35	..	46·41
		Rainfall for 1922-23 ..	..	0·45	..	..	..	9·49	23·84	3·23	18·73	0·42	..	..	56·16
7	Chikhli ..	Maximum 1878 ..	..	..	..	..	..	13·34	48·74	27·63	25·99	2·80	..	..	118·50
		Minimum 1899 ..	..	..	..	..	..	16·72	2·57	4·39	0·78	..	..	..	24·26
		Average ..	0·15	0·09	0·03	0·02	0·19	11·36	26·45	15·59	8·85	1·91	0·39	0·06	65·12
		Rainfall for 1922-23 ..	..	0·42	..	..	..	20·07	30·70	9·28	22·89	1·17	1·47	..	86·00
8	Bulsar ..	Maximum 1878 ..	..	..	..	..	..	14·05	54·23	26·12	40·31	0·57	..	..	135·28
		Minimum 1905 ..	..	0·07	..	..	..	0·68	19·59	3·18	4·84	0·71	0·12	..	29·29
		Average ..	0·12	0·09	0·06	0·02	0·23	12·40	36·90	15·58	10·02	1·77	0·30	0·05	66·95
		Rainfall for 1922-23 ..	..	0·30	..	..	..	10·09	24·21	8·16	24·49	..	0·40	..	67·65
9	Pardi ..	Maximum 1878 ..	..	..	..	..	..	34·33	48·46	30·28	37·75	2·39	0·09	..	133·30
		Minimum 1899 ..	..	0·15	..	..	..	24·50	1·58	4·35	0·73	..	..	..	31·16
		Average ..	0·15	0·11	0·03	0·05	0·27	13·52	29·35	17·99	10·51	1·80	0·31	0·04	74·13
		Rainfall for 1922-23 ..	..	0·53	..	..	..	13·55	25·75	8·56	21·94	..	0·05	..	70·38

Temperature Details (Surat).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	87	88	92	99	95	90	87	86	89	96	94	87
	,, minimum ..	56	61	64	73	79	78	77	76	75	71	63	60
	Absolute maximum ..	90	98	103	108	103	102	93	89	92	102	98	92
	,, minimum ..	55	51	59	65	75	72	73	73	72	67	56	51
1914	Mean maximum ..	90	88	93	96	93	91	85	87	87	95	92	86
	,, minimum ..	59	60	65	73	80	78	77	76	76	72	68	57
	Absolute maximum ..	93	94	108	106	98	92	90	90	92	97	93	91
	,, minimum ..	55	49	57	68	78	73	74	76	73	67	60	52
1915	Mean maximum ..	84	85	92	98	95	94	90	87	90	89	94	88
	,, minimum ..	58	59	68	75	80	80	78	78	76	73	67	60
	Absolute maximum ..	93	97	104	110	106	99	96	95	96	98	96	93
	,, minimum ..	52	51	63	68	77	73	74	75	74	65	61	54
1916	Mean maximum ..	88	85	96	99	98	91	89	85	88	90	89	86
	,, minimum ..	59	58	68	75	78	78	78	76	76	73	66	58
	Absolute maximum ..	93	96	107	105	108	96	96	87	92	97	92	90
	,, minimum ..	53	45	62	71	73	71	74	74	71	64	61	52
1917	Mean maximum ..	87	89	95	96	93	90	86	86	86	87	88	85
	,, minimum ..	59	62	66	74	75	76	78	78	77	76	72	59
	Absolute maximum ..	93	96	101	105	102	98	91	90	94	95	92	88
	,, minimum ..	52	51	60	70	68	73	74	74	73	61	55	53
1918	Mean maximum ..	86	90	96	97	95	91	88	86	90	99	95	87
	,, minimum ..	57	60	68	71	77	80	78	77	76	72	67	58
	Absolute maximum ..	94	97	103	106	103	94	91	89	96	103	99	92
	,, minimum ..	50	50	55	61	74	77	73	75	70	66	60	53
1919	Mean maximum ..	85	..	94	100	96	93	87	85	89	92	91	86
	,, minimum ..	59	59	67	73	79	80	78	77	76	72	69	59
	Absolute maximum ..	91	..	102	107	103	100	98	95	96	97	97	90
	,, minimum ..	52	54	61	69	74	74	74	75	73	69	60	51
1920	Mean maximum ..	84	87	93	98	95	91	86	86	90	96	95	88
	,, minimum ..	62	69	68	72	78	80	78	76	76	73	66	58
	Absolute maximum ..	89	101	104	105	107	108	92	89	99	102	98	94
	,, minimum ..	55	48	63	65	77	73	75	73	74	65	60	52
1921	Mean maximum ..	86	91	98	101	98	93	88	85	84	94	92	88
	,, minimum ..	57	60	68	75	79	81	78	76	75	72	64	60
	Absolute maximum ..	95	100	106	109	110	96	96	88	89	97	92	91
	,, minimum ..	49	53	61	70	76	74	75	74	73	64	62	56
1922	Mean maximum ..	85	90	96	99	100	92	86	84	85	91	90	85
	,, minimum ..	58	63	68	79	81	77	79	77	75	71	66	59
	Absolute maximum ..	91	95	102	108	109	98	90	87	88	97	96	91
	,, minimum ..	49	53	59	67	73	74	75	74	73	68	55	50

Prices—Pre-war Normal

No.	Taluka.	Price in Lbs. per Rupee. Jowari.	Rice.	Wheat.	Tuvar.	Wages per diem per man. Jowari and Bajri. D. f. y. grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.						Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Chorasi ..	24	14	17	17	91	61 0 14 6	0 6 8	0 4 0
	Non-headquarter towns.								
2	Olpad ..	22	15	16	14	61	54 0 14 1	0 4 10	0 4 8
3	Mandvi ..	23	17	17	13	189	80 0 12 0	0 5 0	0 3 11
4	Bardoli ..	23	17	16	15	225	107 0 13 2	0 5 4	0 3 6
5	Valod Peta ..	25	17	15	14	295	107 0 14 2	0 5 6	0 3 6
6	Jalalpur ..	23	16	15	14	142	64 0 10 2	0 4 11	0 3 3
7	Chikhli ..	24	17	15	14	..	84 0 12 4	0 5 3	0 3 0
8	Bulsar ..	22	16	15	15	..	128 0 13 6	0 5 3	0 3 0
9	Pardi ..	24	16	16	16	..	98 0 10 6	0 5 3	0 4 0
	Average of the non-headquarter towns.	23	17	16	14	182	90 0 12 6	0 4 2	0 3 5

Prices—1922-23

No.	Taluka.	Prices in Lbs. per Rupee. Jowari.	Rice.	Wheat.	Tuvar.	Wages per diem per man. Jowari and Bajri. D. f. y. grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.						Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Chorasi ..	18	11	10	9	54	30 1 9 8	0 12 2	0 11 8
	Non-headquarter towns.								
2	Olpad ..	20	11	11	10	25	33 1 8 0	0 10 0	0 10 0
3	Mandvi ..	17	13	10	10	69	153 1 7 0	0 7 11	0 4 10
4	Bardoli ..	17	13	10	9	107	62 1 8 0	0 8 0	0 5 0
5	Valod P. ..	18	13	9	8	149	107 1 8 0	0 8 0	0 5 0
6	Jalalpur ..	16	11	8	9	59	40 1 8 0	0 10 2	0 6 8
7	Chikhli ..	18	11	9	9	..	69 1 12 0	0 8 11	0 5 8
8	Bulsar ..	16	10	9	9	..	39 1 6 0	0 8 0	0 5 8
9	Pardi ..	16	10	9	8	..	81 2 0 0	0 10 0	0 6 0
	Average for the period ..	17	12	9	9	82	72 1 9 3	0 9	9

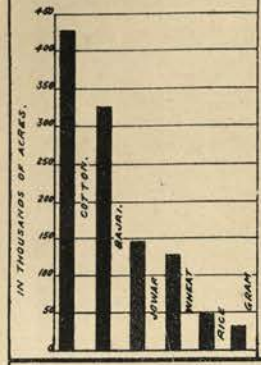
Famine Relief—Average Daily Numbers 1911-12, 1918-19 and 1920-21

Months	1911-12. Relief workers.	1911-12. Dependents.	1911-12. Gratuitously relieved.	1911-12. Total daily average.	1911-12. Price in Lbs. per Rupee. Jowari.	1911-12. Price in Lbs. per Rupee. Bajri.	1918-19. Relief workers.	1918-19. Dependents.	1918-19. Gratuitously relieved.	1918-19. Total daily average.	1918-19. Price in Lbs. per Rupee. Jowari.	1918-19. Price in Lbs. per Rupee. Bajri.	1920-21. Relief workers.	1920-21. Dependents.	1920-21. Gratuitously relieved.	1920-21. Total daily average.	1920-21. Price in Lbs. per Rupee. Jowari.	1920-21. Price in Lbs. per Rupee. Bajri.
	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
	No Relief Works were opened.						No Relief Works were opened.						No Relief Works were opened.					
Average for the period ..																		

WEST KHANDESH DISTRICT.

WEST KHANDESH DISTRICT.

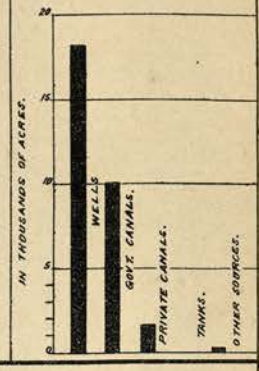
RELATIVE AREA OF PRINCIPAL CROPS.



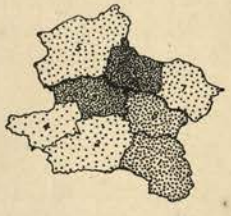
AREA UNDER IRRIGATION.

ONE DOT = 100 ACRES.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



AREA UNDER CROPS.



JOWAR. ONE DOT = 100 ACRES.

BAJRI. ONE DOT = 100 ACRES.

WHEAT. ONE DOT = 100 ACRES.

GRAM. ONE DOT = 100 ACRES.

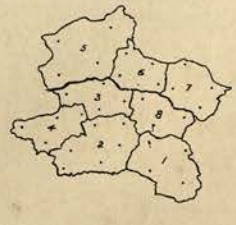
SESAMUM. ONE DOT = 100 ACRES.

COTTON. ONE DOT = 100 ACRES.

KHARIF-SEASON ONE DOT = 10 CENTS.

RAINFALL.

RABI-SEASON ONE DOT = 10 CENTS.



HOT-WEATHER ONE DOT = 10 CENTS.

WEST KHANDESH DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

NOT LIABLE TO FAMINE.
LESS LIABLE TO FAMINE BUT WITH FREQUENT SCARCITY.
VERY LIABLE TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1918-19.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1920-21.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

NUMBER OF CATTLE.

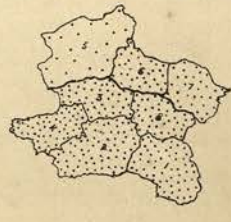
1909-10

ONE DOT = 1000 CATTLE.

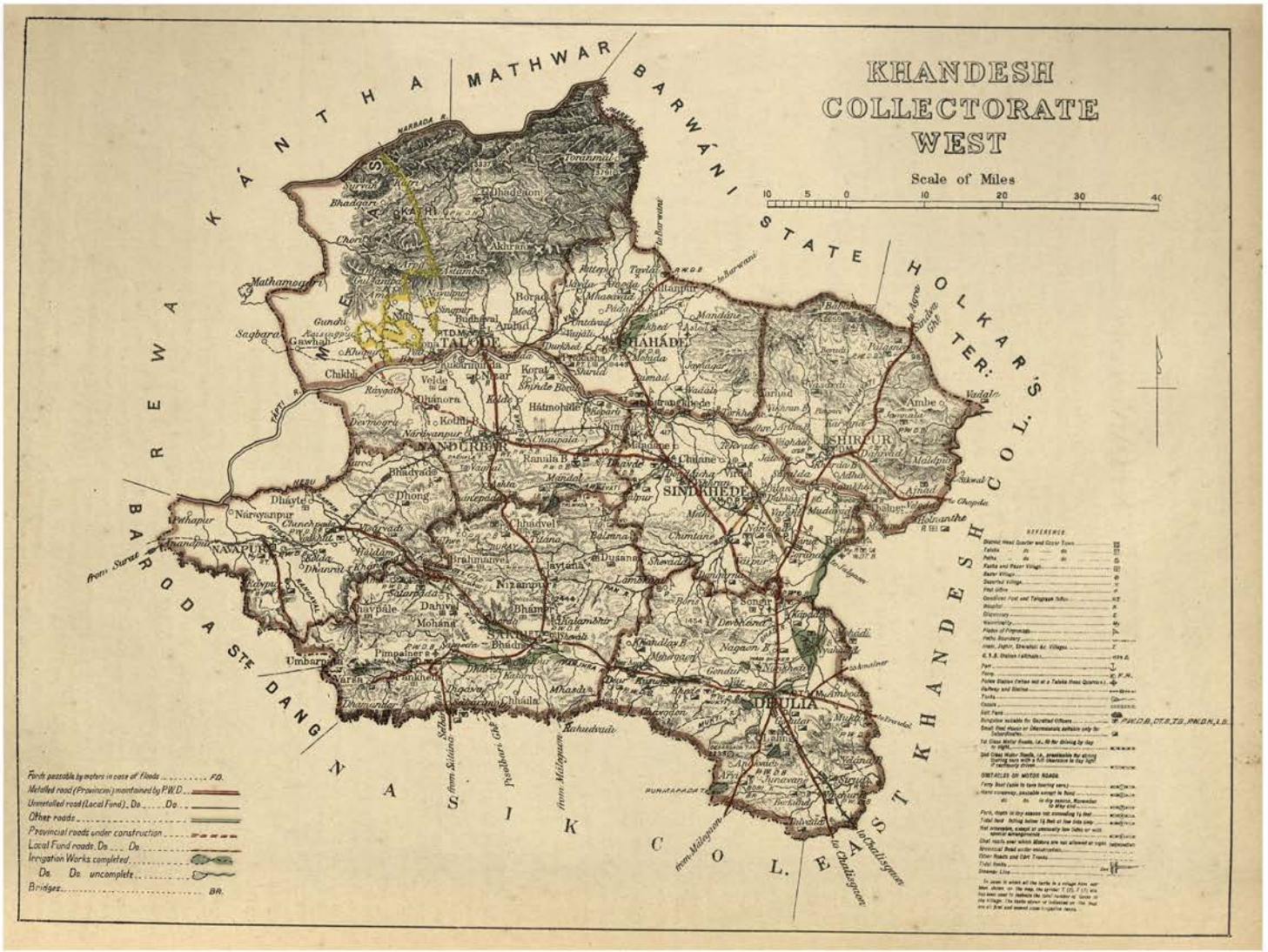
1915-16

ONE DOT = 1000 CATTLE.

1919-20



ONE DOT = 1800 CATTLE.


KHANDESH
COLLECTORATE
WEST
Scale of Miles
10 5 0 10 20 30 40
SATPUDA
MATHWAR
BARWANI STATE
HOLKAR'S TER.
BARODA STE
DANGS
NASIK COL.
KHANDESH COL.
NAVAPUR
NANDURBAR
TALODE
SHAHADE
SINDKHEDE
SHIRPUR
DHULIA
Bhadgaon
KATHI
Akkrani
Toranmal
Mathamogdri
Sagbara
Gawhali
Chikhli
Velde
Nandurbar
Dhayted
Narayanpur
Dhong
Bhadvade
Ranala B.
Chimane
Dhadvel
Brahmanvel
Jaytana
Nizampur
Dahivel
Mohana
Bhadra
Pimpalner
Umbargaon
Varsa
Chhaila
Rigaon
Dhamnar
Sultanpur
Borad
Untdvad
Mandane
Dusane
Lamkani
Songir
Nagaon B.
Gondur
Mukti
Jaitane
Shirud
Ambe
Vadgaon
Maldpur
Ajnad
Chopda
Sakwal
Bhamer
Malambhar
Khandlay B.
Mhasdi
Ruhudvade
Dewbhand
Amalner
Chalisgaon
Pachora
Jamner
Bodwad
Nasirabad
Dondaicha
Sindkheda
Shahada
Taloda
Nandurbar
Shirpur
Dhulia
Navapur
Sakri
Nizampur
Songir

WEST KHANDESH

POSITION AND AREA

The district of West Khandesh lies between 20° 38′ and 22° 2′ north latitude and 73° 35′ and 75° 17′ east longitude and covers an area of 5,439 square miles. It is bounded on the north by the Narbada river, on the north-east by the Barwani State and the Holkar's Territory, on the east by the district of East Khandesh, on the south by the Nasik district and on the west by the Baroda Territory and States of the Rewa Kantha Agency.

PHYSICAL FEATURES

West Khandesh is hilly and rugged except where wide black soil plains extend on either side of the Tapti and its chief tributaries. The Navapur taluka is below the Western Ghats and belongs by climate and position to Gujarat. The Western Ghats, after throwing out the spur (Satmalas) which bounds the district on the south and after bisecting Pimpalner and skirting its northern boundary, come to an end. North of the Tapti and between it and the Narbada lie the Satpuras, presenting a bold out-line on the south with a belt of thick forest infested by wild beasts. The Satpuras rise very abruptly.

The aspect of West Khandesh is very varied. The more easterly talukas present to some extent the conditions of East Khandesh. The Tapti plain of Shirpur is rich but the northern parts are wild, hilly, Bhil country. Dhulia is broken by low hills. The valleys are well wooded. Sindkheda except in the valley, is a hilly and waving pasture land. Shahada is one of the richest black soil plains of the whole district. Sakri is the most mountainous and Navapur the most hilly taluka. The northern portions of Taloda and the sourthern portions of Nandurbar taluka are very hilly. Between these hilly tracts, however, wide black soil plains extend on either side of the Tapti and its chief tributaries.

CLIMATE AND RAINFALL

In the west of Pimpalner the rainfall is very heavy but on the whole the average rainfall of West Khandesh, twenty-four inches, is less than in East Khandesh. Nevertheless as a whole the rainfall is more certain than in East Khandesh, except in portions of Sindkheda taluka where the rainfall is generally precarious. The climate, except in the proximity of the forest, where it is unhealthy, damp and malarious, is generally fair.

CROPS

Cotton, although not so important as in East Khandesh, is the most important crop in West Khandesh also. It occupies about thirty per cent. of the net cropped area and is especially important in Dhulia, Sindkheda, Shirpur and Shahada. *Bajri* is the most widely grown cereal, occupying nearly twenty-five per cent. of the net area cropped. In comparison, *Jowar* covers but a small area. Wheat occupies nearly one and a quarter lakhs of acres. Rice and the hill grains are grown in the westernmost talukas.

Among pulses, *math* and *kulith* which are grown as subordinate crops give the largest outturn. Gram is of more importance than in East Khandesh; it is chiefly grown in Shahada and Nandurbar. Among oil-seeds, sesamum takes the first place and generally occupies about thirty thousand acres. Niger seed is grown in Sakri and to a small extent in Navapur taluka. The cultivation of groundnut has been steadily increasing despite temporary fluctuations owing to bad seasons. The crop now occupies over fifteen thousand acres. It is mostly grown in Dhulia and Sindkheda talukas.

CATTLE

West Khandesh is essentially a cattle-breeding district, and in the country bordering on the Satpuras in the Taloda, Shahada and Shirpur talukas, there are excellent facilities for cattle breeding. There are extensive grazing grounds both within and without forest boundaries which contain good varieties of grass. There are many professional breeders in this tract, Vanjaris, Khillaris, Bhils and Rajputs, who keep herds of cattle numbering up to one hundred and even up to two hundred in some cases, but they are very inferior in their methods to the Rabaris of Upper Gujarat. The type of cattle at which they chiefly aim is the Tapti Khillari, and in parts of Shirpur and Shahada talukas they produce some very useful cattle of this type, of which they sell the male calves at the age of about one year to cultivators in the open country. Apart from the professional breeders, the ordinary cultivators of this tract keep a large number of cattle, sometimes from fifty to hundred, which subsist on the ample grazing and bring in some profit. Inspite of the good facilities for cattle breeding which this tract offers the cattle are not of a high order. Even the best are inferior to the carefully-bred cattle which are imported from Malwa, Nimar and Indore. The bulk of them are of an intermediate breed between Malvi and Khillari. The Sonkheri cattle which are bred in the Sakri (Pimpalner), Navapur, Taloda and Nandurbar talukas and which will tolerate a heavy rainfall are worthy of note.

FORESTS

There are 1,360 square miles of forest proper and 131 square miles of fodder and fuel reserves in charge of the Forest Department and about 177 square miles of pasture under the Revenue Department. The forests to the west and north-west of the district are valuable for their yield in timber, a large proportion of which is exported by the Tapti Valley Railway to Surat and other places, and the fuel yield is also increasing annually. There are huge areas of grass producing lands in this district which is the main source of fodder in times of famine in Gujarat. In 1921-22, for instance, as much as seventy-five lakhs pounds of grass was pressed and kept as Fodder Reserve at Navapur.

IRRIGATION

The principal irrigation works in West Khandesh are the small Mukti Tank, south of Dhulia, and the irrigational channels on the Panjhra river flowing past Dhulia. These make up the Lower Panjhra River Works. The channels served by the *bandharas* are forty-five miles in length. In the Sakri taluka there are about sixty *bandharas* on the Panjhra and Kan rivers. The Lower Panjhra River Works command a gross area of 13,117 acres of which 12,627 acres are culturable and also irrigable by the complete project. The area actually irrigated every year naturally fluctuates according to seasons, that in 1922-23 amounting to nearly two and a half thousand acres.

There are over ten thousand wells used for irrigation in the district. They are most numerous in Dhulia, Sindkheda, Sakri and Nandurbar talukas.

DRINKING WATER

The supply of drinking water is sufficient throughout the district except in parts of Shirpur, Shahada, Sakri and Nandurbar talukas. In Shirpur taluka, scarcity of drinking water is especially felt in the northern portion of the taluka, *i.e.*, in the *Pahads*. A scheme is in contemplation for the improvement of water supply by the damming up of big *nalas*. In the hill tracts of the Shahada taluka the *nalas* get dry in hot season and temporary "*zaras*" are dug up. In some villages on the Tapti bank wells are too deep. In Sakri taluka the scarcity is generally felt in villages which are far off from the Panjhra, Kan and Burai rivers. Nandurbar town is notorious for scarcity of drinking water. Water supply is sufficient in the western part. Of the two or three rivers only the Shivan has always a perennial supply. The Patal Ganga dries up in bad seasons. Similar is the case with the Amrawati. In the valley bordering on the Tapti the level of the sub-soil water is deep.

TRADE AND INDUSTRIES

The only weaving centre in the district is Dhulia where there is a large Momin population from Upper India doing well on hand-loom weaving. There are also a large number of ginning and pressing factories of seasonal working in the district.

As in East Khandesh the most important article of export is cotton, the other chief exports are food grains, oil-seeds, butter, wax, and honey. Of imports the chief articles are spices, metals, piecegoods, yarn and sugar.

COMMUNICATIONS

The Dhulia-Chalisgaon branch of the G. I. P. Railway line, which traverses the district over a distance of nineteen miles, has led to an enormous increase in the trade of this district. The Tapti Valley Railway which runs east to west over a distance of ninety-four miles has had a similar effect on the commerce and traffic of the district.

The most important road is the Bombay-Agra Road which runs from Malegaon in the Nasik district to Dhulia, Shirpur and Palasner in this district. The completion of the three roads (*a*) Dhondaicha-Shahada-Khetia, (*b*) Nandurbar-Nizampur and (*c*) Navapur-Borzar, which were under construction in 1911 has led to a considerable increase in internal and external trade. The total length of roads maintained by the Public Works Department on their own account or the District Local Board is nearly four hundred and fifty miles and by the Taluka Local Board about six hundred miles. The proposed roads in the Nandurbar taluka and further into the Mewas Estates would further improve

communications and would make the surrounding area accessible for relief from Nandurbar town and railway. Similarly the proposed trans-Tapti road almost parallel to the river and connecting the talukas of Shirpur, Shahada and Taloda would considerably improve communications. The traffic on the metalled roads is much facilitated by the use of motors which is a new feature of the decade.

RELIGION

The total population of the district, 641,847, is composed of 608,122 Hindus, 32,509 Musalmans, 1,011 Christians, 195 Parsis and 10 persons of various other denominations.

LANGUAGES

Marathi, Bhil and Khandeshi are the principal languages and are spoken of by 28, 37, and 23 per cent. of the population respectively. Hindi (Hindusthani) and Gujarati is spoken by about five per cent. each. Rajasthani (Marwadi) is used by nearly two per cent. of the population.

BROAD OCCUPATIONS

According to broad occupations 469,664 persons or 73·2 per cent. are dependent on Agriculture, for their livelihood. Industry (including mines) supports 42,433 persons or 6·6 per cent., Trade and Transport, 48,736 persons or 7·6 per cent., and Professions and Liberal Arts 8,954 persons or 1·4 per cent. The remainder 72,060 persons or 11·2 per cent. of the population have to follow various occupations for their maintenance.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district, mainly according to occupations but in a few cases according to castes. The figures are based on the census of 1921 and represent both workers and their dependents.

Pasture and *Agriculture*.—Of the total population of 480,525 supported by pasture and agriculture, ordinary cultivators number 311,166; farm servants and field labourers number 153,551 while 4,937 persons are dependent on income from rent of agricultural land. Of the persons engaged in the raising of farm stock, herdsmen, shepherds and goat-herds 4,736, and cattle and buffaloe breeders and keepers 3,908 are the most numerous. The condition of the agricultural classes is generally fair as the soil is good, the rainfall though small rarely fails and cotton and other crops fetch good prices. Cattle-breeders and keepers are also fairly off owing to good grazing facilities and demand for cattle and their by-products within and without the district.

Industry.—The wood industry stands first under this head. It supports 7,454 persons including 5,423 carpenters, joiners, etc., and 1,793 basket-makers and other workers in bamboos, canes, etc. The textile industry follows close maintaining 7,096 persons. In the metal industry workers in iron 1,750 and those in brass, copper, etc., 827 are the most important. Potters number 2,561, and brick and tile-makers 843. In the food-industry, butchers 1,231, sweetmeat makers 402 and grain parchers 390 deserve a mention. The building industry is mainly composed of brick-layers and masons 2,088, and stone-cutters and dressers 793. Among "miscellaneous" industries the barbers 3,923, shoe-makers 2,676, tailors 2,396 and washermen 1,239 are the most prominent. Generally speaking, persons noted above get now-a-days enough work on reasonable wages and are fairly well off.

Trade.—The trade in food-stuffs (excluding hotels) is by far the most important of the class supporting 19,015 persons. Of these, grocers and sellers of oil, salt, condiments and spices, etc., number 6,101; grain and pulse dealers number 4,214; sellers of milk, butter, fish, poultry, etc., number 2,100 while dealers in hay, grass and fodder amount to 4,460. The trade in fuel such as firewood, cow-dung cake, etc., supports 4,635 persons and is of some importance in the district. The trade in piece-goods and textiles affords the means of livelihood to 2,422 persons. Traders as a class are secure from famine.

Professional Beggars.—These number 5,274. In times of famine they readily migrate and are hence not likely to need relief on an extensive scale.

Depressed Classes.—The Mahars and Dheds 29,929; Chambhars 5,318, Mangs 2,131 and Bhangis 473 are the chief of these classes. Mahars are mostly sweepers in Municipal towns; many also weave *Khaddar*. Chambhars practice leather-work, the Mangs are rope-makers and Bhangis are scavengers in Municipal towns. As a rule these classes are not quite well off but still earn living wages and are not likely to need relief except in the most acute famines.

Brahmans (10,135).—These are mostly priests, Government servants, land-holders, money-lenders, etc., and are fairly well off.

Musalmans (32,509).—They follow various occupations. They are chiefly weavers, cotton cleaners, butchers, shop-keepers, etc., etc., and are in a fair condition.

Christians (1,011) and *Parsis* (195) are quite well off.

ECONOMIC CONDITION

In the eastern division of the district the villages of Dondaicha and Nardana, lying on the Tapti Valley Railway, are rising and gaining in importance in trade such as cotton, chillies, groceries, etc. There are ginning and pressing factories in this sub-division.

In the western sub-division, Navapur which has risen to the status of a taluka town is gaining in importance owing to its trade in timber and also the operations of cutting and baling the grass which lend considerable importance to it. Government propose to establish a saw-mill at Navapur and there is already a factory for baling grass.

The Bhils, Mavchis and Koknis occupying the hilly portions and jungles which are practically free from famine, do not naturally require any provision for their employment on relief works.

A cotton spinning and weaving mill is proposed to be started at Dhulia which will give better facilities of labour to the neighbouring villages.

Sugarcane is planted on the irrigation of the Panjhra and Kan rivers in the Sakri taluka. The area irrigated extends to about eight hundred acres. sugarcane is crushed in the cane-pressing machines worked by bullocks and the money outturn thereof amounts to about one lakh of rupees every year. *Gul* is sold locally and sometimes sent to Dhulia, Dondaicha and Nandurbar for sale.

In the Sakri taluka nearly one hundred and sixty handlooms are at work. The Mahars carry on this business. They weave *Khaddar* and now they get good wages. The annual outturn of *Khaddar* might amount to rupees fifty thousand.

Migration.—People in the district do not generally migrate in search of labour in a year of scarcity, but a few in Sakri taluka do migrate to a small extent in the direction of Dhulia, Nandurbar, Navapur and Shahada talukas and those in Sindkheda generally go to Nemad for daily labour. In Nandurbar taluka the Bhils resort to '*Kabadi*' system (carrying loads on bullocks) and some of them at times migrate to the adjoining Gaikwad and Rajpipla Territories in search of work.

LIABILITY TO FAMINE

Before the great famine of 1899-1900 the liability of West Khandesh to acute distress, except probably in the Tapti Valley, was considered very remote. In that year, however, the whole of West Khandesh suffered equally with East Khandesh. Nevertheless the country cannot be said to be liable to recurring famines of the first magnitude as the rest of the Deccan is. The liability to distress exists, however, and the scarcity may on occasions, as in 1899-1900 reach the most acute stage. Like East Khandesh, West Khandesh may be classed with the Deccan Transition Tracts. Some portion of Nandurbar and a few villages in the Shahada taluka are liable to famine. Except for this it is not possible to say that any particular tract is more liable to famine than any other.

PREVIOUS FAMINES

In **1876** the rainfall was very short. Prices were high, and distress, though not very severe, was widespread.

In **1896** the population suffered from a general rise in the prices of food, rather than from deficient rainfall which was copious till the end of August. The *rabi* harvest, however, was a failure. Distress was most severe in the tract bounded by the Tapti and Burag rivers, and a line running north and south through the town of Nandurbar. Further west the pinch of high prices was not felt and the hill-tribes, who could obtain plenty of coarse grains, jungle fruits and edible roots did not suffer at all.

In **1899-1900** the rainfall was far short of the average and closed abruptly in September. The *kharif* crop was a total failure and *rabi* was not sown, except in irrigated land, for want of the late rains. The crop outturn was thus very meagre and acute famine prevailed throughout the district.

In **1900** the rainfall was deficient and there was considerable distress in the talukas of Sakri, Nandurbar, Taloda and Shahada. Relief works which had been closed in December 1900 were reopened on a small scale in March 1901.

In **1901** the rains were unseasonable and unevenly distributed. Crops were again poor in the four western talukas while locusts and rats damaged what was produced. Relief works which had been closed in September 1901 were opened again in January 1902 for about eight months.

In **1911** failure of crops occurred in nearly two-fifths of the district and suspensions and remissions, *tagavi* advances and gratuitous relief to a few village servants was found sufficient. Scarcity of fodder was more acute in particular, and over forty-seven lakhs of pounds of Government grass had to be imported.

In **1918** scarcity prevailed in the major portion of the district but it nowhere amounted to a regular famine. Dole to village servants and decrepit persons, opening of poor houses, *tagavi* advances and grant of remissions and suspensions were found to meet the situation adequately.

In **1920** again the rains failed in parts and scarcity prevailed. The same measures as were adopted in 1918 were undertaken and the difficulty tided over.

FORECAST OF RELIEF WORKERS

When there is no deficient rainfall no relief of any kind is ordinarily required. In famine years, however, the number of persons likely to require relief would be about twenty thousand persons in Nandurbar taluka and two thousand persons in Shahada taluka or roughly twenty-five to thirty thousand persons for the whole district.

WEST KHANDESH STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and Area of Villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which Agricultural Statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area Cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not Irrigated.	Fallows.	Total.	Area Uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Other.	Total.
								No.	No.	Rs.	No.	Acs.		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Dhulia	187	756	2	4	189	760	136,698	179	3,66,889	187	486,168	99·6	2,407	269,644	17,507	294,698	10,672	120,480	60,586	191,658
2	Sakri	164	754	2	4	163	758	99,796	79	1,74,803	161	578,789	99·2	7,293	191,934	69,590	268,727	15,959	195,657	58,436	310,052
3	Nandurbar	163	501	11	27	174	528	78,705	149	3,33,578	160	310,119	99·1	5,829	174,444	35,625	215,898	22,241	33,911	38,079	94,231
4	Navapur	130	694	7	24	137	628	67,310	107	93,665	127	280,994	99·7	186	106,476	37,777	144,441	17,789	12,842	15,406	135,959
5	Taloda	291	1,159	10	24	301	1,183	53,181	44	1,63,259	131	122,866	16·2	812	74,659	6,394	81,865	4,979	27,647	8,375	41,001
6	Shahada	185	456	9	24	194	480	69,468	144	4,20,511	167	263,332	78·4	3,838	166,770	18,619	188,227	4,716	46,160	22,909	73,805
7	Shirpur	162	596	2	3	164	599	56,723	95	2,66,684	118	176,180	45·7	236	113,118	16,714	130,068	7,441	17,916	20,755	46,112
8	Sindkheda	166	502	2	3	168	505	91,702	181	3,48,951	168	323,065	100·0	4,514	220,185	19,665	244,364	10,393	21,925	46,360	78,701
	Total	1,445	5,328	43	110	1,488	5,438	613,265	112·8	21,68,140	1,219	2,540,101	72·1	30,027	1,316,570	221,941	1,568,538	164,179	536,538	270,846	971,563

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.
1	Dhulia	2,469	..	..	4,736	202	7,407	34	4,961	..	..	..	50	615	213	1,200	..	724	7,797	390	7,407
2	Sakri	5,158	102	..	1,949	..	7,209	1,004	3,930	..	..	284	941	1,408	662	595	..	716	9,351	2,148	7,203
3	Nandurbar	..	1,091	..	5,079	..	6,170	..	3,611	..	16	..	93	889	42	420	..	2,018	6,280	110	6,170
4	Navapur	162	..	..	26	..	188	..	82	..	..	..	..	80	5	17	..	4	188	..	188
5	Taloda	..	255	..	557	..	812	..	323	..	..	..	3	80	20	117	..	269	812	..	812
6	Shahada	1,753	..	..	2,085	..	3,838	1	2,968	..	..	..	11	37	40	253	..	932	4,243	403	3,838
7	Shirpur	..	..	..	236	..	236	..	18	..	..	..	2	2	6	157	..	59	247	11	236
8	Sindkheda	546	299	..	3,663	6	4,514	29	2,955	..	7	..	30	607	28	642	..	792	5,090	576	4,514
	Total	10,088	1,747	..	18,325	208	30,368	1,075	18,848	..	32	284	1,120	2,909	1,023	3,401	..	5,514	34,206	3,838	30,368

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and Area of Villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Density per square mile.	Land Revenue.	Area for which Agricultural Statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area Cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not Irrigated.	Fallows.	Total.	Area Uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Other.	Total.
								No.	No.	Rs.	No.	Acs.		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Dhulia	187	756	2	4	189	760	129,147	169·9	2,80,121	187	486,151	99·6	9,976	262,487	19,674	292,137	13,708	123,083	60,303	194,094
2	Sakri	164	754	2	4	166	758	94,410	84·9	1,58,700	144	485,199	99·2	6,203	164,173	57,082	227,458	14,097	168,416	49,226	257,741
3	Nandurbar	163	501	11	27	174	528	71,737	135·9	3,09,419	160	310,149	99·1	6,072	110,489	99,134	215,695	21,515	33,905	39,033	94,453
4	Navapur	147	605	7	24	154	629	52,389	83·3	88,072	144	379,294	94·2	340	104,350	74,563	179,253	14,766	95,091	30,244	200,041
5	Taloda	289	1,158	12	25	301	1,183	47,833	40·4	1,50,720	132	123,313	16·3	3,584	32,452	45,468	81,504	5,337	27,716	8,756	41,809
6	Shahada	185	456	9	24	194	480	68,409	142·5	3,81,702	167	262,531	78·4	5,766	97,292	85,775	188,833	4,429	46,160	23,129	73,698
7	Shirpur	162	596	..	..	162	596	57,642	96·7	2,66,969	119	176,180	45·8	314	107,222	25,422	132,958	4,748	17,419	21,095	43,262
8	Sindkheda	166	502	2	3	168	505	89,154	176·5	3,35,389	168	323,048	100·0	8,044	198,498	36,941	243,483	10,525	21,924	47,316	79,765
	Total	1,443	5,328	45	111	1,488	5,419	580,725	106·8	19,70,862	1,221	2,545,865	72·3	40,299	1,076,963	444,059	1,561,321	121,905	533,575	279,064	984,544

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.
1	Dhulia	2,849	..	..	7,116	11	9,976	30	6,530	..	80	140	13	210	255	1,128	..	2,048	10,456	480	9,976
2	Sakri	4,370	78	..	1,755	..	6,203	691	3,195	..	..	..	574	605	975	603	..	1,010	7,657	1,454	6,203
3	Nandurbar	..	452	..	5,619	..	6,072	..	2,547	..	431	..	700	17	28	751	..	2,010	6,488	259	6,229
4	Navapur	158	182	..	40	..	340	50	124	..	..	..	17	119	9	48	..	24	383	43	340
5	Taloda	17	127	..	2,531	9	3,584	6	2,898	..	130	..	226	10	21	76	..	241	3,608	24	3,584
6	Shahada	2,334	..	..	3,582	..	5,916	6	4,139	..	137	..	229	118	30	272	..	1,034	5,965	49	5,916
7	Shirpur	..	..	..	314	..	314	..	60	..	..	..	8	..	8	112	..	139	327	13	314
8	Sindkheda	511	124	..	7,307	102	8,044	44	4,225	..	..	..	40	99	32	1,841	..	2,465	8,764	720	8,044
	Total	10,393	1,825	..	28,266	122	40,606	831	23,722	..	778	140	1,807	1,178	1,388	4,823	..	8,981	43,648	3,042	40,606

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Barley.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Urdid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Oil-seeds. Sugarcane.	Sesamu.	Linseed.	Castor-seed.	Ground-nut.	Safflower-seed	Niger-seed.	Others.	Total.	Fibres. Dyes.	Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder-net cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	..	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	..	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.
1	Dhulia	25,247	99,650	71	5,018	1	150	..	124	130,261	337	399	881	20,491	528	22,636	815	350	236	1,401	17	..	17	519	213	3,360	7	869	7,788	..	..	..	12,024	..	114,517	1,245	115,762	8	282,841	5,850	276,991
2	Sakri	7,493	76,527	6,080	5,413	6,366	1,090	..	19,596	115,565	212	4,152	3,034	26,375	2,650	36,403	361	333	9	703	48	..	48	515	662	3,001	229	895	732	..	4,455	5	9,237	..	39,929	723	40,651	13	205,736	4,599	199,137
3	Nandurbar	32,707	29,356	864	37,014	900	1,917	..	4,382	115,160	1,618	6,618	7,401	2,498	7,617	25,734	362	51	28	441	446	33	479	812	352	691	1,261	2,700	841	20	2,447	11,826	20	32,279	1,074	33,353	19	182,538	3,913	185,625
4	Navapur	3,178	890	27,323	1,165	4,507	961	..	32,962	69,986	5,167	2,485	4,143	234	725	12,754	132	11	13	156	1	..	1	137	5	1,816	..	2,273	29	..	1,494	..	7,613	..	25,605	2,326	27,931	..	109,586	359	109,227
5	Taloda	13,258	1,577	5,600	24,231	..	689	..	2,229	47,584	1,823	4,541	64	208	62	6,698	119	12	552	683	258	..	258	512	20	2,437	1,052	4,220	106	..	..	2,517	10,352	..	8,043	540	8,583	..	26,944	723	26,121
6	Shahada	39,055	22,460	5,968	33,564	..	894	..	494	102,435	1,146	4,197	706	4,197	91	10,137	2,191	..	309	2,500	3	..	3	253	45	6,535	965	6,268	540	18	13	1,449	9,325	..	55,668	726	56,394	45	181,387	6,207	175,180
7	Shirpur	7,265	30,900	5	7,498	20	54	..	236	45,978	579	2,628	1,418	6,631	243	11,545	433	208	48	689	123	..	123	60	8	5,827	113	408	562	..	..	..	6,910	..	48,935	1,263	50,198	..	115,519	2,165	113,354
8	Sindkheda	17,391	64,002	29	11,141	..	65	..	188	92,814	1,146	2,428	886	14,166	572	18,242	629	307	206	1,142	48	..	48	659	28	3,652	159	1,578	5,711	..	..	5	11,105	..	102,814	1,916	104,730	5	228,745	4,046	224,699
	Total	145,594	325,371	48,990	125,144	11,794	7,818	..	41,216	705,927	19,261	33,545	13,624	79,859	4,931	151,220	3,139	1,325	736	5,200	306	33	339	5,857	1,050	31,887	3,484	15,152	16,317	18	5,982	6,123	78,963	20	427,789	9,863	437,652	88	1,386,296	28,112	1,358,184

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Urdid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Oil-seeds. Sugarcane.	Sesamu.	Linseed.	Castor-seed.	Ground-nut.	Niger-seed.	Others.	Total.	Fibres. Dyes.	Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder-net cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.
1	Dhulia	21,785	102,183	39	6,595	..	173	85	130,860	325	172	1,040	19,212	180	20,929	2,314	1,335	134	3,783	24	..	24	659	265	2,094	6	422	1,283	..	..	3,805	..	119,222	621	119,843	10	280,198	7,735	272,463
2	Sakri	5,644	64,570	3,603	3,233	3,656	1,707	3,885	106,298	145	441	1,146	21,583	417	23,732	1,554	402	2	1,963	2	..	2	660	975	1,635	2	540	319	1,305	..	3,821	..	34,809	274	35,083	288	172,621	2,445	170,376
3	Nandurbar	6,599	42,029	2,979	2,675	900	1,475	3,452	65,005	4,418	217	1,110	6,573	49	12,367	649	228	32	909	27	23	50	1,091	35	1,941	6	1,994	274	..	2,592	6,809	61	31,543	459	31,982	2	119,298	1,216	118,082
4	Navapur	3,100	4,117	29,341	129	5,156	1,043	2,496	64,982	7,068	419	2,111	895	484	10,977	52	..	10	62	..	..	..	130	9	1,032	..	1,160	901	1,855	..	4,137	..	22,004	965	22,969	..	107,666	611	107,055
5	Taloda	1,780	3,038	5,590	2,898	..	45	158	15,181	3,735	282	..	91	20	138	2,191	..	309	2,500	3	..	3	253	21	2,205	..	6,268	540	..	..	1,841	10,372	..	6,816	222	7,038	..	36,674	213	36,462
6	Shahada	5,103	23,798	691	4,158	..	776	195	34,631	1,033	114	274	3,194	80	4,695	1,825	372	66	2,263	12	..	12	1,045	80	1,722	23	511	153	..	..	1,536	3,765	..	59,375	448	60,423	9	106,873	1,014	105,859
7	Shirpur	1,525	32,747	..	35	..	87	60	40,345	265	296	604	4,637	70	5,812	2,026	108	43	2,169	30	..	30	1,986	..	2,228	..	2,268	93	..	..	2,361	..	49,360	178	49,538	105	107,642	106	107,536
8	Sindkheda	12,823	70,933	44	4,225	..	40	98	87,995	101	37	679	15,342	97	16,256	1,225	1,446	265	4,936	17	..	17	1,027	32	1,106	9	765	692	..	558	5,133	12	101,516	1,068	102,584	..	211,762	5,220	206,542
	Total	63,975	363,317	47,137	23,998	9,723	5,856	30,651	544,657	16,728	1,978	6,969	69,456	1,394	96,525	9,882	3,875	629	14,386	109	23	132	5,945	1,395	13,743	47	11,692	2,917	3,162	6,547	38,108	73	437,345	4,154	441,499	414	1,143,134	18,009	1,125,125

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Carts. Large, i.e., over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Dhulia	29,892	42	259	137	1,596	51	17,182	9,041	15,024	6,666	80,790	3,287	11,802	30,285	11,413	3	1,668	6,125	18·7
2	Sakri	27,679	1,544	502	31	1,072	60	30,200	5,945	50,427	4,636	102,084	2,349	4,561	38,584	12,579	2	1,759	4,669	13·8
3	Nandurbar	39,614	264	193	99	1,207	30	23,204	9,123	24,259	6,616	104,589	1,916	1,206	19,222	16,061	6	2,160	8,159	14·1
4	Navapur	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	Taloda	11,291	64	46	16	500	54	5,404	2,124	6,695	1,465	27,720	662	8	4,722	4,954	..	1,333	2,081	12·8
6	Shahada	18,802	21	134	73	532	36	8,575	6,452	10,171	4,594	48,623	2,131	89	10,686	7,930	..	2,695	4,065	20·0
7	Shirpur	12,749	36	69	46	788	36	9,531	4,402	9,549	3,772	41,498	1,307	933	9,796	3,470	2	2,000	3,838	19·4
8	Sindkheda	21,883	79	112	46	434	45	7,558	5,919	8,803	4,918	49,797	2,092	2,533	17,365	6,942	..	1,306	5,523	21·6
	Total	161,110	2,050	1,320	453	6,167	312	101,674	43,259	106,108	32,667	455,100	13,744	20,512	130,675	63,651	14	16,723	34,455	17·1

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Carts. Large, i.e., over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Dhulia	27,151	54	390	114	1,466	77	16,568	6,702	8,385	3,495	58,402	2,939	10,279	15,530	10,949	52	3,733	6,910	20·8
2	Sakri	27,775	47	444	52	775	47	16,932	3,962	19,291	2,325	65,828	2,352	10,189	19,692	9,191	2	2,650	4,896	20·4
3	Nandurbar	18,582	104	355	55	1,005	12	8,657	4,444	8,124	2,274	43,812	1,704	1,254	7,802	8,293	136	2,502	3,718	20·7
4	Navapur	19,663	349	318	41	778	59	13,090	5,461	13,806	2,052	53,497	367	82	3,647	9,280	..	412	4,629	10·9
5	Taloda	9,722	51	128	29	723	23	3,548	1,512	3,926	746	20,408	633	2	2,497	4,299	..	1,035	2,165	16·3
6	Shahada	15,986	201	166	45	699	16	5,260	4,279	4,698	2,247	33,916	1,993	106	5,114	7,168	..	2,659	4,355	22·7
7	Shirpur	11,139	36	64	61	2,111	78	6,693	3,722	5,702	1,795	30,497	1,390	856	5,979	5,695	105	1,993	3,644	20·7
8	Sindkheda	20,129	59	240	66	622	52	5,347	4,328	5,672	2,609	39,124	2,073	2,178	10,078	7,237	123	5,163	5,584	22·6
	Total	170,147	901	2,105	463	8,179	364	70,095	32,930	69,666	17,539	343,130	13,471	24,944	69,539	62,112	418	16,967	33,898	19·4

WEST KHANDESH STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For irrigation.	Government Canals. For drinking.	Government Canals. For Cattle and Washing.	Private Canals. For irrigation.	Private Canals. For drinking.	Private Canals. For Cattle and Washing.	Wells in use. For irrigation. Kutcha.	Wells in use. For irrigation. Pakka.	Wells in use. For irrigation. Total.	Wells in use. For drinking.	Wells in use. For Cattle and Washing.	Tanks. For irrigation.	Tanks. For drinking.	Tanks. For Cattle and Washing.	Other Sources. For irrigation.	Other Sources. For drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Dhulia ..	..	69	..	..	..	..	708	3,143	3,851	1,600	116	5	1	4	..	..	9
2	Sakri ..	..	..	..	..	..	..	179	950	1,129	861	42	..	3	19	..	..	..
3	Nandurbar ..	..	..	..	..	..	..	326	1,427	1,753	731	58	1	..	18	..	..	..
4	Nawapur ..	..	5	..	..	..	..	10	38	48	463	..	8	..	1	..	..	3
5	Taloda ..	..	..	..	..	..	..	148	129	277	398	208	..	..	..	..	..	..
6	Shahada ..	..	1	..	..	..	..	126	748	874	498	202	3	1	..	2	6	8
7	Shirpur ..	..	..	..	..	..	..	1	262	263	675	35	..	..	..	..	26	15
8	Sindkheda ..	..	3	2	..	4	..	281	2,086	2,367	1,613	84	..	..	8	1	3	1
	Total ..	..	78	2	..	4	..	1,779	8,783	10,562	7,272	745	18	5	42	3	35	36

Goverament Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area Irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Lower Panjhra-River Works ..	13,117	12,627	12,627	12,627	*1,531	*96	*1,627
						†174	†616	†790
	Total ..	13,117	12,627	12,627	12,627	1,705	712	2,417

* Patna thal.
† Jirayat.

Holdings, 1921-22.

No.	Taluka.	Numbers of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total No.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Dhulia ..	1,875	7,115	3,230	367	11	12,598	285,428	22·7	2 8 6	1 3 2
2	Sakri ..	868	4,272	3,253	222	5	8,620	259,323	30·1	1 8 0	0 9 7
3	Nandurbar ..	502	4,102	2,976	254	7	7,841	204,278	29·4	1 2 9	0 14 5
4	Nawapur ..	37	2,728	1,725	126	1	4,617	131,366	28·5	1 6 2	0 14 5
5	Taloda ..	127	2,081	658	60	2	2,928	69,453	23·7	1 5 10	0 14 6
6	Shahada ..	563	3,484	1,791	213	15	6,066	179,964	29·7	1 8 15	0 14 2
7	Shirpur ..	954	3,158	1,088	117	12	5,329	129,655	24·3	1 4 5	0 14 0
8	Sindkheda ..	2,210	6,471	2,274	173	17	11,145	241,763	21·7	1 3 12	0 14 8
	Total ..	7,138	33,409	16,095	1,532	70	58,244	1,501,210	25·8	1 6 4	0 14 6

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per Acre.	Fully assessed Area (including Alienated Land in Government Villages). Population.	Incidence per Head of population including Alienations.
		Acres.	Rupees.	Rs. a. p.	No.	Rs. a. p.
1	Dhulia ..	275,799	3,26,763	1 2 11	135,298	2 8 6
2	Sakri ..	251,912	1,50,519	0 9 7	67,163	2 4 9
3	Nandurbar ..	189,721	2,99,330	1 9 3	74,596	4 5 8
4	Nawapur ..	129,082	75,313	0 9 4	54,246	1 6 9
5	Taloda ..	69,251	1,44,842	2 3 7	30,586	5 1 9
6	Shahada ..	167,641	3,81,990	2 4 6	63,964	6 0 7
7	Shirpur ..	120,135	2,28,209	1 15 9	55,515	4 11 10
8	Sindkheda ..	212,496	3,21,683	1 8 3	91,333	4 1 11
	Total ..	1,411,928	19,38,649	1 6 0	573,121	3 11 0

Goverament Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area Irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Lower Panjhra-River Works ..	13,117	12,627	12,627	12,627	*1,197	*617	*1,814
						330	370	700
	Total ..	13,117	12,627	12,627	12,627	1,527	987	2,514

* Area under consolidated assessment.

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1	Dhulia ..	Maximum 1867 ..	..	..	..	..	0·27	11·75	10·99	5·84	3·42	1·08	7·06	0·04	40·33
		Minimum 1911 ..	..	..	..	..	..	1·75	1·75	1·27	0·13	0·01	0·42	..	2·94
		Average ..	0·24	0·11	0·05	0·42	0·30	5·12	5·49	3·76	1·07	1·52	0·72	0·23	22·54
		Rainfall for 1922-23 ..	..	..	1·25	0·42	1·73	7·27	4·32	0·79	5·74	0·11	1·58	0·36	21·50
2	Sakri (Pimpalner) ..	Maximum 1886 ..	..	..	..	..	1·81	6·10	7·53	4·56	3·10	5·65	..	..	28·75
		Minimum 1918 ..	..	..	..	..	0·72	0·76	2·38	1·28	0·38	0·32	0·01	..	6·95
		Average ..	0·21	0·08	0·05	0·08	0·46	2·70	3·98	2·59	1·54	1·47	0·08	0·05	10·25
		Rainfall for 1922-23 ..	..	..	0·94	0·50	..	4·69	4·92	0·67	2·89	1·10	1·20	1·10	18·01
3	Pimpalner D. ..	Maximum 1883 ..	0·23	..	..	..	11·07	7·34	5·60	9·79	9·14	..	..	..	43·17
		Minimum 1918 ..	..	..	0·11	..	0·34	0·90	2·05	3·52	..	..	..	..	9·10
		Average ..	0·24	0·06	0·09	0·06	0·55	4·26	6·52	3·67	3·45	1·41	0·60	0·03	20·94
		Rainfall for 1922-23 ..	..	..	1·27	0·77	..	5·32	6·69	1·55	3·34	0·97	0·66	0·53	21·10
4	Akwa D. ..	Maximum 1914 ..	..	0·35	..	..	..	12·10	58·57	11·51	14·28	..	1·05	..	103·06
		Minimum 1918 ..	..	..	0·26	..	2·61	3·40	8·54	18·36	2·04	..	0·10	..	35·31
		Average ..	0·39	0·09	0·09	0·14	0·56	4·03	22·89	18·61	6·98	1·96	0·48	0·01	65·13
		Rainfall for 1922-23 ..	..	0·23	0·42	0·01	..	12·22	21·31	10·36	20·78	1·54	0·40	0·73	68·00
5	Nandurbar ..	Maximum 1878 ..	..	..	..	..	..	2·37	17·72	20·26	9·16	8·22	..	..	57·73
		Minimum 1918 ..	..	..	..	..	1·01	0·41	1·39	4·66	0·17	..	..	..	7·64
		Average ..	0·28	0·07	0·04	..	0·35	4·35	7·25	4·86	4·09	1·11	0·54	0·05	23·49
		Rainfall for 1922-23 ..	..	..	0·86	0·12	..	3·64	5·41	2·08	3·94	1·01	0·19	..	17·23
6	Nawapur ..	Maximum 1917 ..	..	0·80	..	..	2·18	4·25	14·35	17·98	11·76	14·94	..	..	66·26
		Minimum 1899 ..	..	..	..	..	0·15	0·74	2·86	2·55	1·60	..	..	..	17·90
		Average ..	0·26	0·12	0·03	0·04	0·37	1·46	12·69	7·46	3·36	0·36	0·04	0·17	41·98
		Rainfall for 1922-23 ..	..	0·20	1·97	..	..	8·31	13·39	3·59	12·46	0·76	1·52	0·17	42·37
7	Taloda ..	Maximum 1878 ..	..	..	0·10	0·15	0·91	2·19	31·70	10·65	1·34	..	..	..	61·44
		Minimum 1918 ..	..	..	..	0·96	0·87	2·95	4·10	1·80	..	..	..	..	10·68
		Average ..	0·28	0·11	0·03	0·01	0·38	1·27	6·42	4·16	0·85	0·33	0·12	0·02	28·81
		Rainfall for 1922-23 ..	..	..	0·08	..	..	5·69	4·76	2·63	3·75	0·03	0·62	0·02	23·54
8	Sindkheda ..	Maximum 1878 ..	..	..	..	..	1·23	2·84	16·16	15·01	0·81	..	..	..	54·05
		Minimum 1899 ..	..	..	..	..	2·63	3·02	0·62	1·45	..	..	..	..	7·92
		Average ..	0·35	0·05	0·03	0·04	0·41	5·14	8·10	4·96	4·14	1·01	0·30	0·03	24·56
		Rainfall for 1922-23 ..	..	..	..	0·30	..	5·45	2·60	2·48	4·07	1·87	0·05	..	16·82
9	Shirpur ..	Maximum 1883 ..	0·10	..	..	..	..	8·97	15·42	5·22	10·53	3·38	..	..	43·62
		Minimum 1876 ..	..	..	..	..	..	4·67	4·67	4·11	1·18	..	..	..	9·96
		Average ..	0·18	0·14	0·07	0·08	0·30	6·34	7·25	4·83	3·70	0·99	0·40	0·06	22·84
		Rainfall for 1922-23 ..	..	..	0·14	0·17	0·39	8·58	6·62	2·46	3·13	..	1·62	0·35	23·46
10	Sindkheda ..	Maximum 1878 ..	..	..	..	..	..	3·56	11·87	13·92	8·02	1·19	..	..	38·56
		Minimum 1876 ..	..	..	..	..	..	..	3·62	2·43	0·70	..	..	..	6·75
		Average ..	0·21	0·18	0·04	0·05	0·19	4·21	5·98	5·55	3·49	1·10	0·49	0·08	20·48
		Rainfall for 1922-23 ..	..	..	1·00	..	..	5·28	4·44	1·65	2·53	0·12	0·96	0·28	16·26

Temperature Details (Dhulia).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	87	88	92	105	106	93	86	87	88	90	93	87
	,, minimum ..	55	55	58	72	76	73	68	68	66	65	59	53
	Absolute maximum ..	90	97	103	110	110	107	91	90	90	98	96	93
	,, minimum ..	47	44	53	62	73	72	61	64	58	56	46	44
1914	Mean maximum ..	90	90	94	104	107	95	88	86	87	93	89	85
	,, minimum ..	44	45	49	55	73	67	68	67	64	59	56	44
	Absolute maximum ..	93	96	104	109	112	106	93	92	94	96	98	92
	,, minimum ..	40	39	44	51	69	65	66	64	64	52	45	37
1915	Mean maximum ..	86	89	96	104	108	105	93	89	93	94	90	84
	,, minimum ..	45	47	57	64	70	70	68	69	73	69	62	53
	Absolute maximum ..	94	96	105	109	114	110	100	92	98	98	95	88
	,, minimum ..	35	36	51	59	66	64	64	64	69	59	54	46
1916	Mean maximum ..	86	89	101	104	107	96	92	84	90	90	86	83
	,, minimum ..	52	55	65	76	79	74	75	74	74	71	62	52
	Absolute maximum ..	94	98	107	108	116	104	100	92	95	94	90	88
	,, minimum ..	47	42	56	68	68	62	71	72	71	64	50	45
1917	Mean maximum ..	87	89	97	102	101	96	90	90	86	87	85	84
	,, minimum ..	53	55	63	73	73	73	76	73	73	70	59	52
	Absolute maximum ..	90	96	102	106	105	103	96	95	92	91	91	89
	,, minimum ..	46	47	55	67	69	73	72	71	69	60	42	47
1918	Mean maximum ..	83	91	98	104	106	100	95	88	93	100	94	86
	,, minimum ..	47	56	64	70	70	72	71	69	69	63	58	50
	Absolute maximum ..	91	97	104	109	112	108	101	102	98	102	98	92
	,, minimum ..	44	47	47	62	58	68	67	65	64	56	47	43
1919	Mean maximum ..	88	90	100	105	108	99	92	86	89	92	90	85
	,, minimum ..	52	50	62	71	79	75	74	76	75	67	63	51
	Absolute maximum ..	94	98	107	111	111	112	98	90	96	95	94	90
	,, minimum ..	44	38	55	63	74	70	70	72	72	64	56	42
1920	Mean maximum ..	84	90	100	104	104	100	90	89	94	98	93	91
	,, minimum ..	54	54	62	71	75	82	80	80	81	78	72	51
	Absolute maximum ..	91	100	106	109	109	108	100	93	98	102	97	94
	,, minimum ..	47	40	55	60	70	72	80	74	79	72	69	46
1921	Mean maximum ..	91	92	104	109	109	100	91	87	87	92	88	87
	,, minimum ..	50	50	71	74	77	73	73	72	70	65	54	52
	Absolute maximum ..	96	101	110	111	115	107	100	90	95	90	90	90
	,, minimum ..	38	45	59	68	71	70	72	68	66	53	51	48
1922	Mean maximum ..	83	90	98	100	109	108	88	87	86	90	86	83
	,, minimum ..	53	55	62	73	81	68	73	72	69	66	57	47
	Absolute maximum ..	91	96	105	107	117	116	93	89	90	94	94	91
	,, minimum ..	45	45	51	60	80	60	71	69	68	62	48	39

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Wheat.	Tur-Dal.	Jowari-Kadbi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Dhulia ..	28	25	17	16	..	128	0 12 0	0 5 6	0 4 1
	Nonheadquarter towns.									
2	Sakri ..	24	28	29	15	..	161	0 8 0	0 4 0	0 3 10
3	Nandurbar ..	28	26	18	22	136	300	0 12 0	0 5 4	0 3 9
4	Nawapur ..	28	27	16	14	244	240	0 13 0	0 6 0	0 4 8
5	Taloda ..	27	24	20	18	..	280	0 10 11	0 5 11	0 3 4
6	Shahada ..	28	25	19	17	220	120	0 12 6	0 6 8	0 3 11
7	Shirpur ..	28	27	16	16	..	180	0 12 4	0 6 0	0 3 8
8	Sindkheda ..	28	25	16	16	191	116	0 11 2	0 5 4	0 3 6
	Average of the Non-headquarter towns..	27	25	19	17	193	205	0 11 4	0 5 4	0 3 8

Prices, 1922-23.

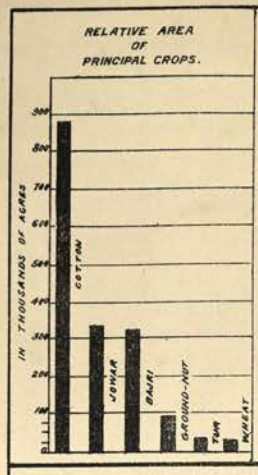
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Wheat.	Tur-Dal.	Jowari-Kadbi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Dhulia ..	20	16	11	11	..	51	1 6 10	0 10 0	0 7 9
	Nonheadquarter towns.									
2	Sakri ..	21	18	15	9	..	142	1 4 0	0 7 6	0 5 6
3	Nandurbar ..	22	16	14	12	233	72	1 0 8	0 7 2	0 5 0
4	Nawapur ..	18	16	14	12	168	107	1 4 0	0 8 0	0 6 0
5	Taloda ..	26	16	14	11	148	240	1 0 2	0 8 0	0 6 0
6	Shahada ..	19	16	13	11	107	68	1 0 0	0 5 6	0 3 6
7	Shirpur ..	20	16	14	10	..	181	1 0 0	0 6 0	0 4 0
8	Sindkheda ..	20	16	12	11	70	..	1 0 0	0 5 6	0 6 0
	Average of the period ..	21	16	13	10	140	135	1 1 3	0 6 11	0 5 8

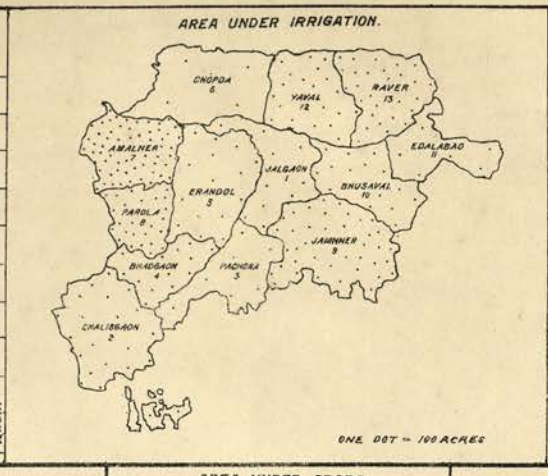
Famine Relief—Average Daily Number.

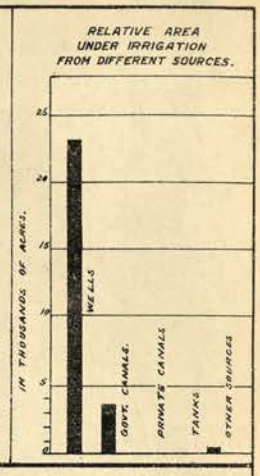
Month.	1911-12. Relief Workers.	Dependants.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependants.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependants.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
	No Famine Relief Works were op ened.																	
Average for the period ..																		

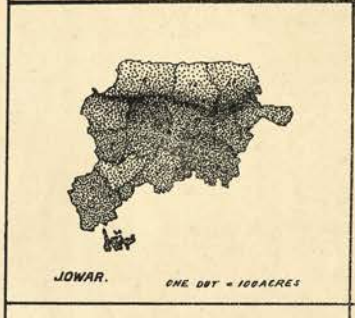
EAST KHANDESH DISTRICT.

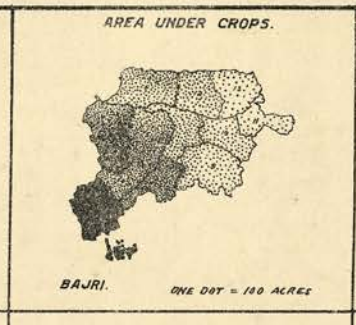
EAST KHANDESH DISTRICT.

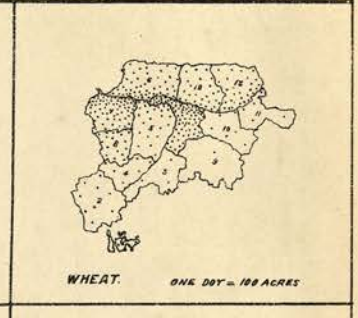


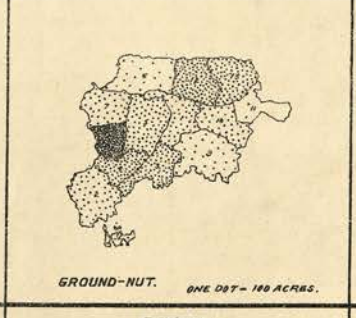


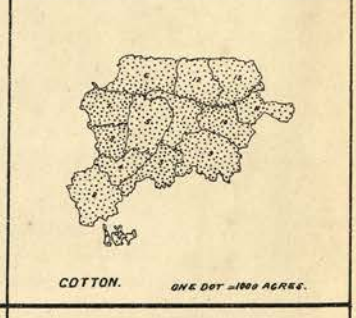


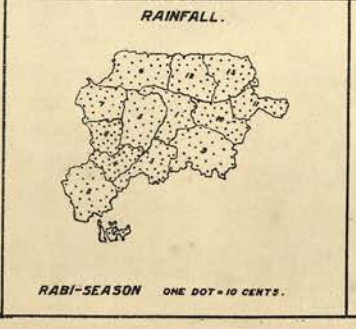


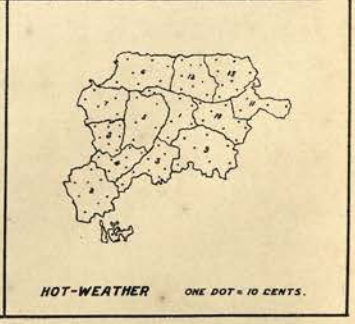












EAST KHANDESH DISTRICT.

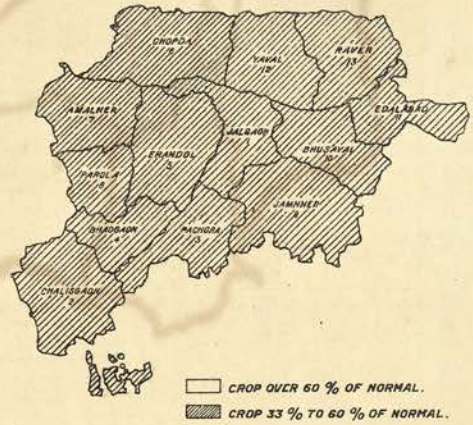
DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.

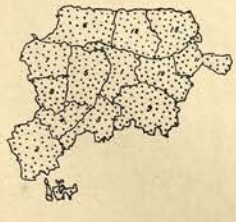
INTENSITY OF FAMINE IN 1918-19.

INTENSITY OF FAMINE IN 1920-21.



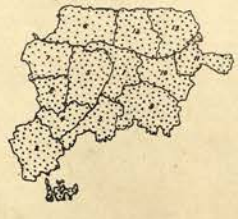
NUMBER OF CATTLE.

1909-10



ONE DOT = 1000 CATTLE.

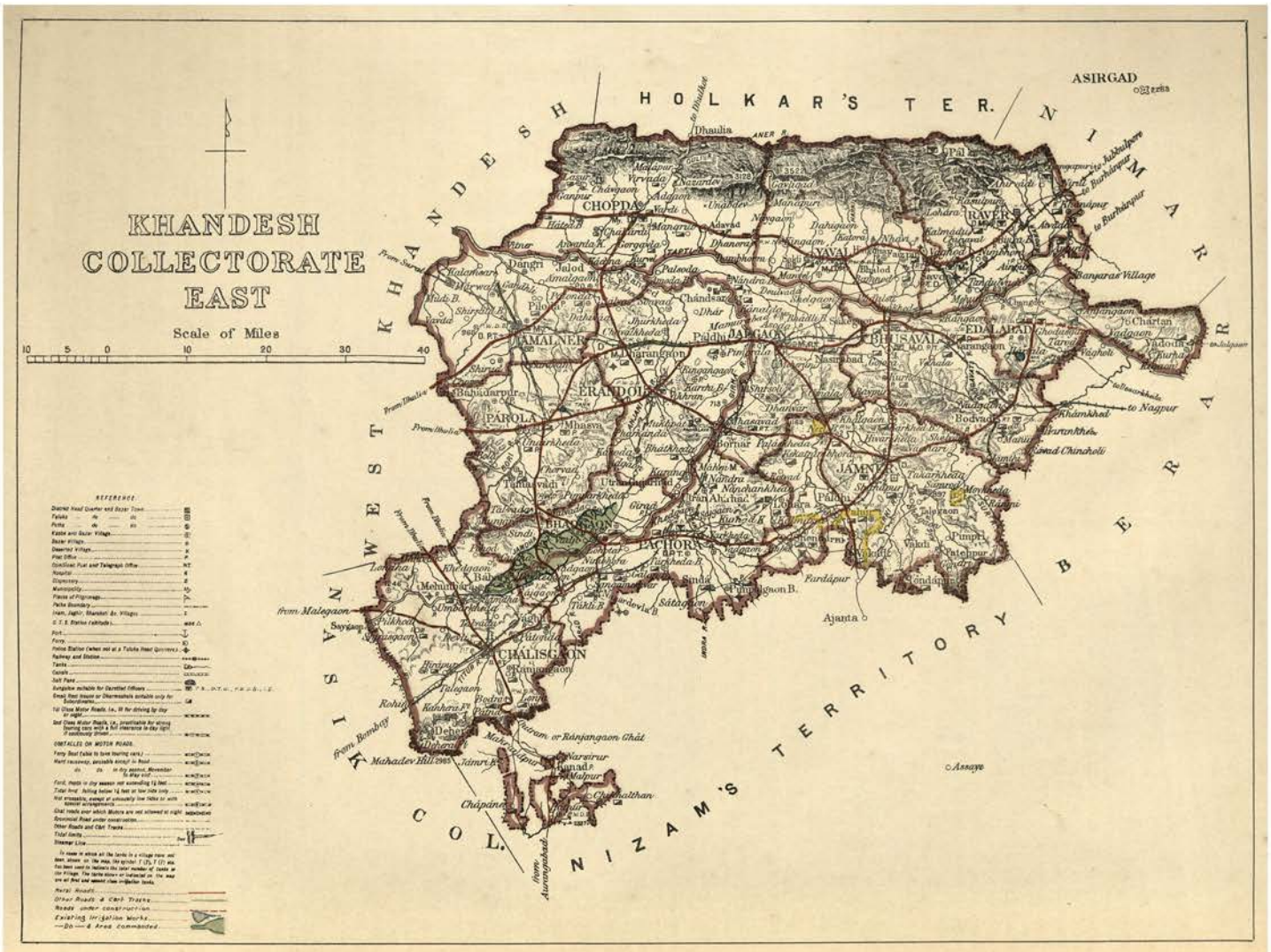
1915-16



ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


KHANDESH
COLLECTORATE
EAST
Scale of Miles
10 5 0 10 20 30 40
HOLKAR'S TER.
NIMAR
KHANDESH
WEST
BERAR
NASIK COL.
NIZAM'S TERRITORY
ASIRGAD
CHOPDA
RAVER
YAVAL
AMALNER
JALGAON
BHUSAVAL
EDALABAD
ERANDOL
PAROLA
JAMNER
BHADGAON
PACHORA
CHALISGAON
Ajanta
Assaye
from Malegaon
from Bombay
from Aurangabad
to Nagpur
to Burhanpur
Banjaras Village
Mahadev Hill
Chápáne
Ranjangaon Ghát
REFERENCE
Metal Roads
Other Roads & Cart Tracks
Roads under construction
Existing Irrigation Works
—Do— & Area Commanded

EAST KHANDESH

POSITION AND AREA

The district of East Khandesh lies between 20° 16′ and 21° 27′ north latitude and 74° 52′ and 76° 24′ east longitude and covers an area of 4,424 square miles. It is bounded on the north by the Holkar's territory, on the east by Berar and the Nimar district of the Central Provinces, on the south by the Nizam's territory and on the west by the districts of West Khandesh and Nasik.

PHYSICAL FEATURES

East Khandesh abuts on the Deccan upland and includes on its northern frontier an extensive tract of high hills belonging to the Satpuras. It is intersected by the Tapti river and drained by the Girna and the Purna as well as by the Tapti. The northern portions of the Raver, Yaval and Chopda talukas are broken and hilly, thinly populated and covered with dense forest. The southern and western portions of the district are also hilly, but the hills are neither so high nor so continuous. They are mostly bare and covered with low brush-wood. On either side of the Tapti runs an unbroken plain of the richest soil. The Tapti valley is on the north, well wooded and on the south, except in the Bhusaval taluka, covered with mango groves. The Girna valley is fringed by poor red soil and tracts of waste with rugged and stony land. The soil near the river banks is better, though greatly inferior to that of the Tapti valley. Jamner is a succession of rises with *babul*-fringed streams intervening.

CLIMATE

The climate is on the whole healthy, though intensely hot, especially north of the Tapti, in the hot season. There is a tendency to malaria after the cessation of the monsoon rains, especially in the villages adjoining the Satpuras.

RAINFALL

The average rainfall of the district is about twenty-eight inches. It is remarkable that it is decidedly larger than that of West Khandesh. The rainfall comes almost entirely from the south-west monsoon. Its peculiarity is the wide range which the tables exhibit. Thus at Bhusaval, the fall of 1883 was seventy-one inches while in 1899 it was only seven.

CROPS

Cotton is by far the most important crop in East Khandesh and occupies an area of over eight lakhs of acres, or nearly forty-five per cent. of the net cropped area. The crop is grown on light as well as on black soil. The seed is, if possible, sown in June. *Jowar* and *bajri* are both large crops, occupying over fifteen per cent. each of the net cropped area. They are the principal rotation crops with cotton. *Jowar* is an early crop and is ordinarily sown with a mixture of *udid* and *ambadi*. In Chalisgaon and Amalner, *bajri* is of more importance and in the adjoining talukas it is nearly as important as *jowar*. *Bajri* is sown later than *jowar* and is often an unmixed crop. In the lighter soils it is considered a good preparation for cotton. Wheat occupies about thirty thousand acres on an average and is particularly important in Jalgaon, Amalner and Chopda talukas. *Mug* and *udid* are the most important pulses; they are grown as subordinate crops to *jowar*. *Tur* is largely grown in rows with *bajri* or with cotton. *Math* and *kulith* are almost equally important, however. Gram is practically confined to the Amalner, Chopda and Jalgaon talukas. *Til* or gingelly (sesamum) is the principal oil-seed. It is mostly grown in Chalisgaon, Amalner, Erandol and Chopda talukas. Linseed is grown as a *rabi* crop in deep black soils.

CATTLE

East Khandesh is not an important breeding centre as West Khandesh is, though the narrow strip below the Satpuras on the north, and notably the north of the Chopda taluka, contains some good grazing grounds. In some of the rough hills in the Pachora and Jalgaon talukas and in the Edlabad peta fair grazing is to be found. In other places, *kadbi* is fairly plentiful and in a good year provides a surplus for the cows and young stock; but the open plains of East Khandesh are not good breeding grounds and so long as the people can get good prices for their cotton and purchase good work cattle from outside, they are not likely to pay much attention to cattle breeding. The local cattle are non-descripts with some *khillari* blood but many good bullocks are to be seen which have been purchased from outside breeders and good calves are also purchased for rearing. The total number of cattle in the district is about six lakhs. Of these roughly two-fifths are plough cattle, one-third milch cattle and one-fourth young stock. Sheep and goats number about two lakhs.

FORESTS

There are about 764 square miles of forest under the Forest Department and thirty-six square miles of pasture in charge of the Revenue Department. The forests are mostly poor; the best are confined to the Satpuras and yield small timber and fuel, chiefly for local consumption. The grazing areas in forest are very valuable and afford grazing to a large number of cattle.

IRRIGATION

The principal protective irrigation works in East Khandesh are the Hartala Tank, the Mhasva Tank and the Jamda Canals.

Hartala Tank.—The tank is situated about four miles from Edlabad town near the village of Hartala. The work consists of an earthen dam twelve hundred feet long and about fifty feet high, with a drainage area of nearly seven square miles. Two small channels called East and West *pats* distribute water from the tank to the fields. Each *pat* is about a mile in length. Distributary channels run off from these *pats*. The whole length of these distributary channels comes to about five miles and a half. The tank commands land of the village of Hartala only; the culturable area under command being about four hundred acres. The tank is not filled every year. The work has however been beneficial as a source of water-supply to the inhabitants and cattle of the village which is situated in the hilly part of the district suffering from want of water.

Mhaswa Tank.—The tank is situated about three miles west of the town of Parola, and has an earthen embankment the maximum height of which is forty-four feet and length about fifteen hundred feet. The available storage capacity is about 172 million cubic feet. There are two irrigation channels one on each bank of the *nala* on which the tank is constructed each nearly three and a half miles in length. The irrigable area under command of the tank is 4,075 acres. The locality in which the work is situated occasionally suffers from scanty rainfall and the tank water then affords great relief especially for *rabi* crops. The storage in the tank is, however, dependent upon a small catchment and cannot be relied on every year. The uncertainty of supply prevents the irrigation of such crops as sugarcane, plantain, etc., and the tank has therefore not proved a paying tank.

Jamda Canals.—The Jamda Canals on the Girna have a drainage area of 2,389 square miles. The works consist of a masonry weir, near Jamda, across the Girna, 1,530 feet long and eighteen feet at the highest point, with two canals, one on the Left bank twenty-seven miles long and commanding 37,122 acres, the other on the Right bank twelve miles long and commanding 9,166 acres. The areas thus commanded are in Chalisgaon and Pachora talukas. Both canals are completely bridged and regulated. The whole area is watered by flow without the use of any lift. The capital outlay on both canals amounted to over one lakh of rupees. The area irrigable by the project is about five thousand acres included in thirty-one villages, twenty of them on the Left Bank Canal and eleven on the Right Bank Canal.

There are over twenty-five thousand wells used for irrigation in the district.

DRINKING WATER

The general condition of the drinking water supply is good, except in the Erandol taluka especially at Dharangaon and Erandol. It is also poor at Parola and in some villages of Edlabad.

INDUSTRIES

The textile industry is the most important industry of the district. Parola, Erandol, Dharangaon are important hand loom centres and dyeing is an industry at Faizpore. Jalgaon is the commercial centre of East Khandesh. There are two spinning and weaving mills at Jalgaon. Next in importance comes Amalner, where there is one spinning and weaving mill. Another mill is being constructed at Chalisgaon. There are ginning and pressing factories at every taluka and peta head-quarters besides others in some out-lying places. The weaving of coarse woollen blankets is also common all over the district.

TRADE

The most important article of export is cotton. The other chief exports are food-grains, oil-seeds, butter, wax and honey. Of imports the chief articles are salt, spices, metals, piece-goods, yarn and sugar.

COMMUNICATIONS

The railway communications of East Khandesh from a famine point of view are excellent. The G. I. P. Railway from Bombay to Jubbulpore runs through the district via Chalisgaon, Jalgaon and Bhusaval. From Chalisgaon

a branch line runs to Dhulia. The Pachora-Jamner Railway thirty-five miles long was opened in 1918. At Jalgaon there is a branch to Amalner whence the Tapti Valley Railway runs to Surat. The Nagpur Railway branches off at Bhusaval.

The roads have greatly improved within the last two decades and feeder roads connect all the taluka and Mahal head-quarters and out-lying tracts with the railway. The most important road the Dhulia-Bhusaval is now being extended to the Berar frontier. The Jamner-Varkhedi Road, twenty-seven miles in length, and the Chalisgaon-Bhadgaon Road, twenty-one miles in length, joining the Dhulia-Bhusaval Road, were constructed during the last decade. The Yaval-Chopda Road, twenty-eight miles in length, joining the Chopda-Shirpur Road, was constructed in 1910. The road from Chalisgaon to the frontier of the Nasik district is under construction. The communication facilities of the district have thus been greatly improved now.

The soil of the Tapti Valley is unsuitable for country tracks except in the fair season.

RELIGION

The total population of the district, 1,075,837, is composed of 965,981 Hindus, 107,509 Musalmans, 1,858 Christians, 439 Parsis and 50 persons belonging to various denominations.

LANGUAGES

Marathi is the vernacular of the district and is spoken by seventy-eight per cent. of the population. Hindi (Hindusthani) is spoken by about ten per cent. principally Musalmans. The other languages are—Bhil used by about three per cent., Rajasthani (Marwadi) by about two per cent. and Khandeshi by about five per cent. of the population.

BROAD OCCUPATIONS

Speaking broadly 765,085 persons or 71·1 per cent. are dependent for their livelihood on Agriculture. Industry (including mines) supports 94,883 persons or 8·8 per cent., Trade and Transport 79,045 persons or 7·3 per cent., the Professions and Liberal Arts 12,285 persons or 1·1 per cent., while the remainder 124,539 persons or 11·6 per cent. have to follow various other occupations for their maintenance.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population according to occupations and in a few cases according to castes. The figures are based on the census of 1921 and represent both workers and dependents.

Pasture and Agriculture.—Of the total population of 773,643 supported by pasture and agriculture, ordinary cultivators number 485,931. Farm servants and field labourers amount to 266,062 while persons dependent on income from rent of agricultural land number 12,548. The herdsmen, shepherds and goat-herds 5,411 and sheep, goat and pig-breeders 1,459 are the most important of the persons engaged in the raising of farm stock. The good soil and the generally sure rainfall of the district combined with the high prices of cotton and other products keep the cultivators in a fairly good condition. The condition of the population devoted to pasture is also fair as butter, wool, etc., find a ready market at a good price.

Industry.—The textile industry supporting 15,772 persons is one of the most important industries of the district. The wood industry is mainly composed of carpenters, turners and joiners 11,213 and basket-makers including thatchers, etc., 4,491. In the metal industry blacksmiths number 4,816 while workers in brass, copper, etc., number 869. Potters number 4,363. In the food industry may be mentioned the grain parchers 1,423, sweetmeat makers 1,000 and butchers 3,493. Brick-layers and masons 4,924, stone-cutters and dressers 1,797 and well-sinkers, etc., 689 are the most prominent in the building industry. Under miscellaneous industries the tailors 5,296, shoe-makers 9,812, washermen 3,277 and barbers 6,092 deserve a mention. As most of the above find ample work on good wages nowadays their economic condition is fairly satisfactory.

Trade.—The trade in piece-goods and textiles supports 7,523 persons. In the trade in food stuffs, grocers and sellers of oil, salt, condiments and spices, etc., 8,152, sellers of milk, butter, fish, poultry 2,601, grain and pulse dealers 2,602 and dealers in hay, grass and fodder 2,036 are decidedly the most important. The trade in fuel such as fire-wood, cowdung cakes, etc., supply the means of livelihood of 2,969 persons. Traders as a class are secure.

Professional Beggars (14,814).—In times of scarcity they readily migrate and are hence fairly secure.

Depressed Classes.—Under these, the Mahars and Dheds 88,014 are most numerous. The Chambhars 15,817, Mangs 8,497 and Bhangis 1,135 are the others under this head. A few Mangs are successful buffalo breeders. Bhangis are employed in Municipal towns, where some Mahars also get engaged as street sweepers, etc. The Chambhars who are shoe-makers get generally enough for their livelihood. Some of these classes may need relief in times of acute distress.

Brahmans (24,450).—Brahmans are mostly writers, Government servants, land-holders, traders, etc., and are quite secure.

Musalmans (107,509).—They follow various occupations. They are weavers, butchers, traders, cultivators, servants, etc., and are fairly well off.

Christians (1,858).—Are well off.

Parsis number only 439 and are mostly well-to-do.

ECONOMIC CONDITION

A considerable number of gins and presses have been established all over the district. These assist to raise the wages, but their value from the point of view of famine would diminish proportionately as the intensity of the famine increased. In a complete famine they would be closed altogether and so far from affording relief they would be unable to employ their usual workers. There are four spinning and weaving mills in the district, and the Railway necessarily gives a certain amount of employment.

Ordinarily there is little *migration* in search of work, partly because there is usually plenty in the district itself. In time of scarcity a certain amount of emigration occurs to the Berars, Holkar, Nimar and the Nizam's territory.

The Gazetteer dealing with the Khandesh district gives an unfavourable verdict. " Khandesh cultivators are as a rule poor. Without forethought or self-restraint they readily run into debt and by grasping and unscrupulous money-lenders are forced to pay back large sums." This verdict needs revision. The condition of the cultivator is better than here described. The spread of education, the high prices of cotton prevailing since the European War, and the succession of good seasons since 1901-02, broken only by the scarcity of 1918-19, have greatly improved the cultivator's condition. He is fairly off at present.

The gross area cropped in 1922-23 was over twenty lakhs of acres. This represents an increase of one lakh of acres over the area cultivated in 1885-86. Even in the scarcity year of 1918-19 the gross area amounted to nineteen and a half lakhs of acres which still means an increase of fifty thousand acres over 1885-86.

Agricultural stock has more than doubled since 1886-87, the cattle census of 1919-20 giving a total of 517,862, which in itself is a considerably reduced number owing to the scarcity of 1918-19, the number at the previous cattle census of 1915-16 being 582,980.

LIABILITY TO FAMINE

In respect to liability to famine from drought the whole district holds a position intermediate between the Deccan and Gujarat. The periods of failure are of far less frequent recurrence than in the Deccan and the district cannot be classed with those Deccan districts which are subject to chronic and intense famines. The distress may, however, be acute in the district as in the year 1899-1900 but such cases are rare. It must be at the same time borne in mind that the rainfall of the district though usually seasonable is not as certain as in the Konkan or in South Gujarat and the district cannot hence be classed as practically immune from famine. Broadly speaking then East Khandesh may be classed with the ' transition tracts ' of the Deccan.

PREVIOUS FAMINES

In **1876** although the registered rainfall was as low as in the worst affected parts of the Deccan the distress did not deepen into famine. Indeed, this year was remarkable for the immigration of great numbers from the famine stricken Deccan, who found a permanent home in Khandesh. Relief works were opened from November 1876 to December 1877. The highest numbers on relief were 8,500 for the whole district in August and September 1877.

In **1896** the first rains were abundant and the *kharif* crop was good but the later rains having failed entirely there was no *rabi*. The district suffered in consequence of high prices due to famine conditions prevailing in the adjoining districts and relief works had to be opened. The part of Bhusaval taluka which lies north-east of the Nagpur Railway with the Edlabad peta and the southern half of Jalgaon taluka were the areas of greatest scarcity. The hill tribes did not suffer.

In **1899** the rainfall was less than one-third of the normal. The June fall was below the average and the average rainfall was very deficient during the next three months. The monsoon ceased at the end of September. The *kharif* crop was a total failure and the *rabi* was not sown, except in irrigated lands, for want of the late rains. The crop outturn for the whole district—East and West—was 32 per cent. compared with a normal year.

Surrounding districts were also affected and acute famine prevailed throughout the whole of Khandesh.

In **1900-01** the monsoon was feeble in June and closed early, but relief works were not necessary in East Khandesh.

In **1918-19** the rainfall was much below normal. Adequate rain did fall till the end of June. There was a break after the first week of July. There was sufficient rain in August, but the September rain was scanty and failed after the first fortnight. The result was a failure greater or less of *jowar* and *bajri*. Cotton was not very bad. The *rabi* crop was a failure but it is an insignificant crop in this district. There was no necessity for declaring actual famine. Scarcity was general. The Bhusaval taluka and the Edlabad peta were the areas most affected. The scarcity was due partly to the failure of the rainfall and partly to the abnormal rise in the prices of food and all other necessaries in consequence of traffic restrictions necessitated by the War.

FORECAST OF RELIEF WORKERS

Considering the large margin of profits left to the cultivator owing to the fancy price which cotton nowadays fetches and taking into account the fact that there was only one year of scarcity (1918-19) during the last twenty years, and that even in that year factors other than drought, such as traffic restrictions necessitated by the Great War, were as much responsible as drought itself for the cause and spread of scarcity, it would seem that the opening of Relief Works would hardly be necessary in the most acute distress in future. State help, if any, would only be required by the destitutes and decrepits who cannot leave their homes. The number of such persons would rarely exceed a few thousands.

EAST KHANDESH TABLES.

Cultivated and Uncultivated Area, 1922-23.

Irrigation Abstract, 1922-23.

Cultivated and Uncultivated Area, 1918-19.

Irrigation Abstract, 1918-19.

Crops, 1922-23.

Crops, 1918-19.

Agricultural Stock, 1919-20.

Agricultural Stock, 1915-16.

EAST KHANDESH, TABLES—II.

Water Supply—1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Jalgaon ..	..	..	..	..	..	..	34	1,414	1,448	1,664	43	..	..	3
2	Chalisgaon ..	3	..	..	..	..	..	284	2,896	3,180	1,668	46	..	..	1
3	Pachora ..	..	..	..	..	..	..	69	2,259	2,328	418	53	..	..	..
4	Bhadgaon P. ..	2	..	..	..	..	..	37	1,299	1,336	1,432	11	..	..	..
5	Erandol ..	..	..	..	..	..	..	84	2,640	2,724	1,406	70	..	..	..
6	Chopda ..	..	..	..	..	..	..	3	681	684	2,692	69	..	..	..
7	Amalner ..	1	..	..	..	..	..	429	2,231	2,660	1,547	77	..	..	..
8	Parola ..	..	..	..	..	..	..	2,006	494	2,500	1,050	24	1	..	..
9	Jamner ..	..	..	..	..	..	..	104	1,122	1,226	2,036	119	..	..	..
10	Bhusawal ..	..	..	..	..	..	..	204	2,437	2,641	2,317	44	1	..	..
11	Edalabad P. ..	..	..	..	..	..	..	54	956	1,010	807	28	..	..	..
12	Yawal ..	..	..	..	..	..	..	17	2,384	2,401	3,933	85	..	..	..
13	Raver ..	..	..	..	..	..	..	12	2,147	2,201	4,714	81	..	..	..
	Total ..	6	..	..	..	..	..	3,459	22,780	26,239	26,452	720	2	5	27

No.	Taluka.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.
1	Jalgaon ..	..	2	3
2	Chalisgaon ..	..	36	1
3	Pachora ..	..	..	..
4	Bhadgaon P. ..	..	..	..
5	Erandol ..	1	..	..
6	Chopda ..	..	..	..
7	Amalner ..	..	..	..
8	Parola ..	..	..	..
9	Jamner ..	..	..	..
10	Bhusawal ..	..	1	22
11	Edalabad P. ..	..	7	..
12	Yawal ..	..	..	..
13	Raver ..	..	..	..
	Total ..	2	46	26

Government Protective Irrigation Works—1922-23.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Hartala Tank ..	584	527	415	415	41	31	72
2	Mhaswe Tank ..	4,647	4,075	1,700	1,700	98	50	148
3	Jamda Canals ..	46,288	40,185	5,000	5,000	1,308	520	1,828
	Total ..	51,519	44,787	7,115	7,115	1,447	601	2,048

Holdings—1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 Acres.	Over 5 and up to 25 Acres.	25 to 100 Acres.	100 to 500 Acres.	Over 500 Acres.	Total Number.	Average. Total Area.	Area of Holding.	Assessment per Holding.	Assessment per Acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres	Rs. a. p.	Rs. a. p.
1	Jalgaon ..	4,234	5,028	1,061	64	2	10,389	147,136	14 3 35	2 11 7	9
2	Chalisgaon ..	1,456	5,871	1,744	173	9	9,251	201,039	21 7 23	4 5 1	1
3	Pachora ..	1,588	3,248	1,762	139	6	6,743	152,872	22 10 5	3 14 1	4
4	Bhadgaon P. ..	1,014	4,085	985	141	0	6,228	78,946	12 6 22	11 3	12
5	Erandol ..	2,453	7,594	2,483	148	0	13,671	199,250	14 3 25	5 10	12
6	Chopda ..	1,918	4,727	1,138	101	3	8,886	192,203	17 5 34	5 9	9
7	Amalner ..	3,114	5,414	1,263	489	2	10,282	173,212	16 13 33	4 6	9
8	Parola ..	1,769	4,882	1,502	97	5	8,255	113,122	13 11 17	2 15	3
9	Jamner ..	1,894	4,856	1,698	283	7	8,738	198,847	22 8 35	5 3	8
10	Bhusawal ..	2,762	6,079	1,169	96	4	8,709	148,756	17 1 30	3 7	12
11	Edalabad P. ..	1,594	2,998	641	65	4	5,302	90,073	16 9 31	2 8	13
12	Yawal ..	6,582	4,753	1,378	52	1	12,766	130,951	10 9 17	1 15	9
13	Raver ..	6,208	4,969	708	82	1	12,028	132,751	11 0 22	1 11	10
	Total ..	38,396	63,107	18,041	1,948	42	121,524	1,947,024	16 0 24	5 6	1 8 4

Incidence of Assessment—1920-21.

No.	Taluka.	Fully Assessed Area. Area.	Assessment.	Incidence per Acre.	Fully Assessed Area including Alienated Land in Government Villages. Population.	Incidence per Head of population including Alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Jalgaon ..	133,636	2,54,023	1 14 5	97,947	2 9 6
2	Chalisgaon ..	192,736	2,00,016	1 0 7	102,391	1 15 3
3	Pachora ..	149,722	2,27,866	1 8 4	84,356	2 11 2
4	Bhadgaon P. ..	75,183	1,32,273	1 12 2	45,014	2 15 0
5	Erandol ..	181,560	2,31,517	1 13 1	90,284	2 9 2
6	Chopda ..	139,369	2,90,619	2 2 2	82,851	3 8 1
7	Amalner ..	159,569	3,42,564	2 2 4	91,457	3 11 11
8	Parola ..	126,728	1,64,901	1 4 9	60,279	2 11 9
9	Jamner ..	189,743	2,18,563	1 2 5	102,867	2 2 0
10	Bhusawal ..	134,432	1,94,595	1 7 2	91,504	2 0 9
11	Edalabad P. ..	77,076	1,20,963	1 9 1	40,841	2 15 4
12	Yawal ..	118,868	2,03,138	1 11 4	89,384	2 4 4
13	Raver ..	121,345	2,65,099	2 2 9	83,575	3 2 6
	Total ..	1,801,158	29,48,228	1 10 3	1,075,028	2 12 0

Government Protective Irrigation Works—1918-19.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres	Acres.	Acres.	Acres.	Acres.	Acres.
1	Hartala Tank ..	584	527	415	415	197	164	361
2	Mhaswe Tank ..	4,647	4,075	1,700	1,700	296	374	670
3	Jamda Canals ..	46,288	40,185	5,000	5,000	4,647	1,296	5,943
	Total ..	51,519	44,787	7,115	7,115	5,140	1,834	6,974

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1	Jalgaon ..	Maximum 1883 ..	..	..	..	0·03	12·81	15·69	9·74	12·34	5·65	..	..	..	56·26
		Minimum 1899 ..	..	..	..	0·26	2·48	2·55	1·83	0·63					91·50
		Average ..	0·34	0·09	0·12	0·11	4·83	9·43	6·39	3·61	1·11	0·53	0·12	0·16	29·06
		Rainfall for 1922-23 ..	..	..	0·49	0·09	..	7·62	3·30	0·39	0·39	0·25	0·25	..	24·00
2	Chalisgaon ..	Maximum 1887 ..	..	..	..	2·76	8·45	12·72	13·62	11·94	1·74	5·70	0·16	0·16	57·09
		Minimum 1899 ..	..	..	..	1·80	0·15	3·19	0·35	2·88	0·51	0·29			9·17
		Average ..	0·26	0·11	0·17	0·14	0·57	5·06	6·45	4·79	0·92	1·46	0·61	0·16	20·75
		Rainfall for 1922-23 ..	..	..	0·42	0·90	0·49	4·04	2·54	10·23	..	4·07	..	..	53·68
3	Pachora ..	Maximum 1883 ..	..	..	..	0·18	8·36	12·80	9·74	10·29	9·40	..	..	..	50·68
		Minimum 1876 ..	..	..	..	..	..	4·60	3·15	0·76					8·51
		Average ..	0·24	0·07	0·12	0·18	0·58	7·40	6·06	4·66	1·38	0·58	0·21	..	20·50
		Rainfall for 1922-23 ..	..	..	0·77	..	..	11·05	9·91	1·74	8·60	0·10	1·73	..	33·90
4	Bhadgaon P. ..	Maximum 1892 ..	..	..	..	0·17	4·08	4·03	10·19	20·90	1·79	1·31	0·28	..	42·75
		Minimum 1899 ..	..	..	..	0·62	4·76	1·13	2·84	1·19					12·64
		Average ..	0·33	0·11	0·10	0·49	2·49	2·79	5·59	6·16	1·33	0·65	0·20	..	29·35
		Rainfall for 1922-23 ..	..	..	1·73	0·35	8·66	9·90	1·15	7·30	..	2·99	0·12	..	32·20
5	Erandol ..	Maximum 1883 ..	0·08	..	..	0·18	10·95	12·36	9·43	9·56	9·93	..	..	..	52·49
		Minimum 1876 ..	..	..	..	..	..	3·50	7·41	0·91					11·82
		Average ..	0·24	0·19	0·04	0·06	0·43	5·23	8·05	5·30	1·19	0·58	0·10	0·10	28·03
		Rainfall for 1922-23 ..	..	..	1·00	..	..	2·64	6·74	1·28	4·39	0·16	2·39	0·55	19·15
6	Chopda ..	Maximum 1878 ..	..	..	..	0·06	3·09	20·46	23·95	7·41	1·67	..	..	..	56·64
		Minimum 1899 ..	..	..	..	0·62	2·71	1·97	1·89	1·62					9·02
		Average ..	0·27	0·14	0·06	0·10	0·59	4·89	8·31	5·22	0·91	0·55	0·11	0·25	20·95
		Rainfall for 1922-23 ..	0·50	..	0·50	..	..	4·36	6·03	1·05	6·72	0·24	1·60	0·25	21·25
7	Amalner ..	Maximum 1878 ..	..	..	..	0·08	..	13·47	8·45	17·95	9·47	0·97	..	..	50·39
		Minimum 1876 ..	..	..	..	..	..	..	3·63	5·00	0·11				8·74
		Average ..	0·23	0·17	0·08	0·07	0·36	4·79	7·43	4·62	4·83	1·21	0·53	0·13	24·45
		Rainfall for 1922-23 ..	..	..	0·80	..	0·85	6·53	5·36	1·44	5·35	0·19	1·21	0·53	22·26
8	Parola P. ..	Maximum 1878 ..	..	..	..	..	..	9·36	12·04	14·39	15·77	4·21	..	..	55·77
		Minimum 1899 ..	..	..	..	0·37	0·45	2·77	1·45	2·60	0·74				12·38
		Average ..	0·24	0·15	0·11	0·05	0·60	5·85	7·43	6·02	5·21	1·14	0·60	0·12	27·52
		Rainfall for 1922-23 ..	..	..	1·67	0·60	0·07	5·45	5·68	1·04	5·27	..	2·02	0·23	22·03
9	Jamner ..	Maximum 1883 ..	..	..	..	0·05	8·83	15·04	13·59	10·43	7·34	..	..	..	55·28
		Minimum 1899 ..	..	0·04	..	..	1·50	2·27	1·89	1·30					7·30
		Average ..	0·35	0·09	0·19	0·09	0·50	5·67	7·88	6·86	5·40	1·30	0·58	0·33	29·44
		Rainfall for 1922-23 ..	..	..	1·51	0·45	0·06	4·03	9·46	2·79	6·47	0·53	2·46	0·11	27·95
10	Bhusawal ..	Maximum 1883 ..	..	..	..	0·65	14·52	26·12	14·01	12·29	3·32	..	..	..	70·91
		Minimum 1899 ..	..	..	..	0·15	1·75	1·58	1·68	1·68					7·10
		Average ..	0·31	0·17	0·16	0·13	0·54	5·32	8·75	5·96	5·35	1·18	0·58	0·19	28·62
		Rainfall for 1922-23 ..	0·10	..	0·62	..	..	2·33	8·21	1·32	11·39	0·55	0·86	0·30	25·08
		Maximum 1883 ..	0·15	..	..	0·25	7·32	12·36	9·59	9·04	5·14	..	..	..	43·90
11	Edalabad P. ..	Minimum 1899 ..	..	..	..	0·48	2·81	2·12	0·76	1·05					7·22
		Average ..	0·36	0·15	0·15	0·06	0·35	4·54	7·45	5·49	5·05	1·27	0·36	0·19	25·42
		Rainfall for 1922-23 ..	..	..	0·76	..	..	6·17	4·07	0·52	8·59		0·80	..	22·11
12	Yawal ..	Maximum 1878 ..	..	..	..	0·15	5·46	10·43	31·15	8·80	5·36	..	..	..	59·34
		Minimum 1899 ..	..	..	..	0·14	1·67	1·15	3·06	1·29	0·41	0·03			7·75
		Average ..	0·36	0·21	0·12	0·10	0·65	4·77	8·26	5·61	5·35	0·93	0·46	0·10	26·92
		Rainfall for 1922-23 ..	0·02	..	0·63	..	..	2·13	7·24	1·49	8·15		1·94	0·15	21·75
13	Raver ..	Maximum 1883 ..	..	..	..	..	..	12·02	16·19	9·20	9·94	5·33	..	..	50·70
		Minimum 1899 ..	..	..	..	0·18	0·10	3·76	1·34	2·54	2·06	0·02	..	..	10·00
		Average ..	0·41	0·24	0·16	0·12	0·53	5·29	6·65	5·22	4·85	1·15	0·60	0·33	25·55
		Rainfall for 1922-23 ..	..	..	0·36	0·22	0·11	6·41	6·53	1·12	8·49	0·50	0·75	0·12	24·61

Temperature Details (Jalgaon).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F	°F.
1913	Mean maximum ..	79	85	97	105	106	96	87	89	86	93	86	83
	,, minimum ..	58	62	74	73	73	73	68	69	68	68	57	52
	Absolute maximum ..	80	88	102	110	112	114	92	92	96	98	92	86
	,, minimum ..	56	58	74	72	70	68	66	68	64	62	54	50
1914	Mean maximum ..	86	88	97	103	102	98	87	85	88	93	84	83
	,, minimum ..	54	56	58	74	77	74	73	69	71	68	66	58
	Absolute maximum ..	90	96	104	110	115	110	98	88	92	96	92	88
	,, minimum ..	50	54	52	70	74	70	70	66	66	62	64	55
1915	Mean maximum ..	85	87	87	102	108	103	92	88	88	89	86	78
	,, minimum ..	54	56	57	69	79	71	73	71	71	69	73	63
	Absolute maximum ..	88	92	102	110	112	112	98	90	92	96	92	84
	,, minimum ..	50	54	50	58	74	68	68	68	70	68	68	58
1916	Mean maximum ..	80	85	96	104	105	89	88	84	87	85	80	75
	,, minimum ..	60	62	67	71	80	78	76	76	77	73	69	61
	Absolute maximum ..	88	90	100	108	112	104	96	88	90	88	86	80
	,, minimum ..	56	54	62	70	72	72	70	74	74	72	62	54
1917	Mean maximum ..	77	81	92	100	99	95	85	86	83	82	78	77
	,, minimum ..	61	63	73	79	77	77	73	77	74	74	70	62
	Absolute maximum ..	80	90	100	106	104	104	92	92	88	86	84	80
	,, minimum ..	54	56	66	76	76	72	74	74	72	70	56	56
1918	Mean maximum ..	76	85	92	104	103	95	93	85	90	94	84	77
	,, minimum ..	58	65	68	79	84	81	77	75	78	76	75	63
	Absolute maximum ..	82	94	98	110	108	106	98	90	97	96	88	82
	,, minimum ..	54	62	64	78	80	78	76	72	74	74	70	60
1919	Mean maximum ..	81	84	94	101	105	96	89	84	87	85	86	79
	,, minimum ..	60	64	70	70	73	78	71	70	70	69	68	63
	Absolute maximum ..	82	88	100	106	108	106	98	86	94	90	88	86
	,, minimum ..	50	58	64	68	70	68	68	68	68	68	66	58
1920	Mean maximum ..	78	83	93	100	101	99	88	89	93	92	91	85
	,, minimum ..	58	60	61	61	71	81	77	74	74	74	68	61
	Absolute maximum ..	82	88	98	105	110	108	100	99	98	108	96	91
	,, minimum ..	56	56	58	60	66	75	75	70	73	67	58	56
1921	Mean maximum ..	86	88	98	107	108	102	90	85	85	83	93	89
	,, minimum ..	63	63	72	80	80	83	77	75	72	70	63	62
	Absolute maximum ..	93	94	103	110	112	110	102	92	90	90	94	88
	,, minimum ..	52	58	65	74	80	80	75	74	70	62	60	58
1922	Mean maximum ..	80	87	99	106	108	100	89	85	84	91	94	94
	,, minimum ..	61	66	71	77	75	72	70	70	69	69	64	57
	Absolute maximum ..	85	96	104	110	112	106	96	96	98	98	95	95
	,, minimum ..	58	58	58	70	70	70	65	70	70	64	56	50

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Wheat.	Tur dal.	Jowari Kadbi.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Jalgaon ..	28	26	17	16	98	116	0 10 8	0 4 5	0 5 1
	Non-headquarter towns.									
1	Chalisgaon ..	31	29	17	17	128	107	0 14 5	0 5 1	0 4 7
2	Pachora ..	29	27	16	16	91	107	0 12 0	0 4 11	0 5 11
3	Bhadgaon P. ..	28	26	16	15	210	142	0 12 0	0 7 0	0 4 9
4	Erandol ..	28	26	17	16	142	165	0 12 0	0 6 0	0 5 2
5	Chopda ..	26	24	16	15	98	128	0 10 0	0 5 6	0 4 5
6	Amalner ..	28	24	16	16	142	91	0 9 0	0 4 5	0 3 11
7	Parola P. ..	26	25	17	16	128	165	0 11 0	0 6 4	0 4 9
8	Jamner ..	29	27	16	14	152	128	0 12 0	0 7 2	0 4 9
9	Bhusawal ..	26	24	15	15	142	61	0 12 0	0 5 3	0 4 9
10	Edalabad P. ..	29	27	15	16	229	107	0 10 0	0 4 5	0 3 9
11	Yawal ..	26	25	16	15	142	149	0 8 0	0 4 0	0 3 6
12	Raver ..	28	27	16	17	107	61	0 10 10	0 3 11	0 3 9
	Average of the non-headquarters towns ..	28	26	16	16	143	118	0 11 4	0 4 11	0 4 3

Prices—1922-23.

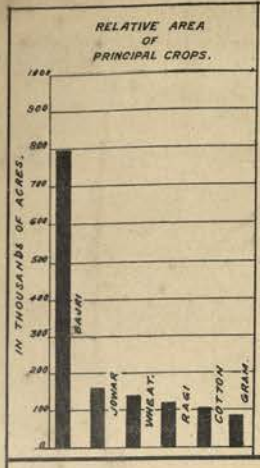
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Wheat.	Tur dal.	Jowari Kadbi.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Jalgaon ..	20	15	12	11	32	65	1 4 4	0 8 2	0 10 6
	Non-headquarter towns.									
1	Chalisgaon ..	22	19	11	10	..	..	1 8 0	0 8 0	0 8 0
2	Pachora ..	21	17	11	11	68	..	1 0 0	0 7 10	0 6 10
3	Bhadgaon P. ..	19	16	10	10	54	112	1 0 0	0 8 0	0 6 0
4	Erandol ..	19	17	11	10	116	150	1 0 0	0 8 0	0 7 10
5	Chopda ..	18	16	11	11	68	44	0 14 3	0 10 3	0 7 1
6	Amalner ..	19	15	12	10	84	66	1 0 0	0 8 0	0 6 0
7	Parola P. ..	19	15	10	11	107	107	1 0 0	0 8 0	0 6 0
8	Jamner ..	19	16	11	9	70	47	1 0 0	0 9 0	0 6 11
9	Bhusawal ..	21	16	11	10	31	30	1 0 0	0 10 3	0 6 9
10	Edalabad P. ..	19	..	11	10	..	..	1 4 0	0 12 0	0 8 0
11	Yawal ..	19	16	12	10	91	56	1 0 0	0 9 0	0 6 0
12	Raver ..	18	15	11	9	116	107	1 0 0	0 9 0	0 7 8
	Average for the period ..	19	17	11	10	77	73	1 2 5	0 9 4	0 7 11

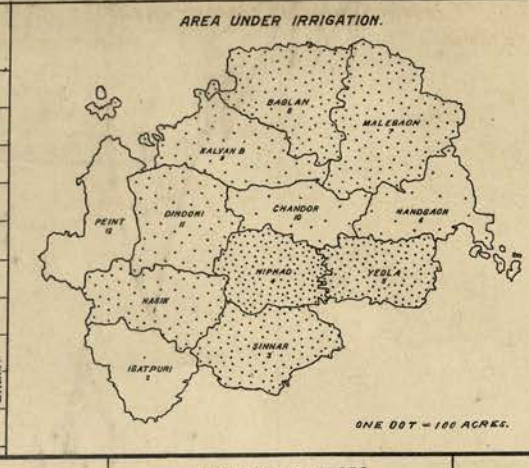
Famine Relief—Average Daily Number 1911-12, 1918-19 and 1920-21.

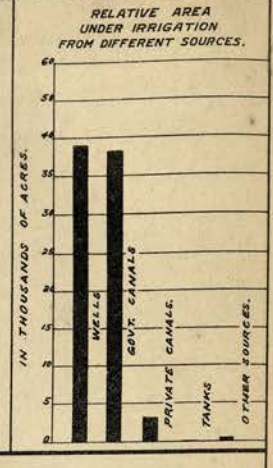
Month.	1911-12. Relief workers.	Dependents.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1918&19. Relief workers.	Dependents.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief workers.	Dependents.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
October ..																		
November ..																		
December ..																		
January ..	No Relief Works were opened.						No Relief Works were opened.						No Relief Works were opened.					
February ..																		
March ..																		
April ..																		
May ..																		
June ..																		
July ..																		
August ..																		
September ..																		
Average for the period ..																		

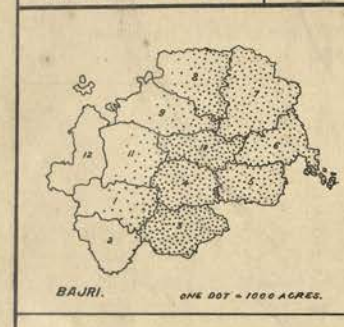
NASIK DISTRICT

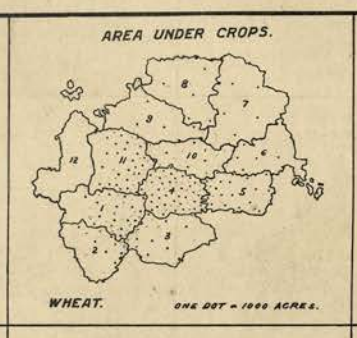
NASIK DISTRICT.

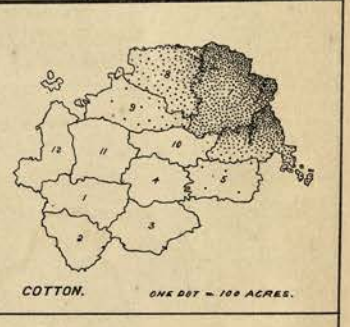


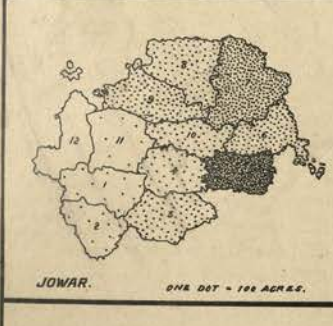


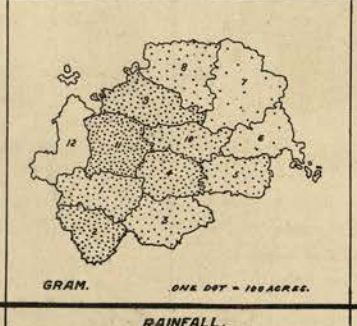


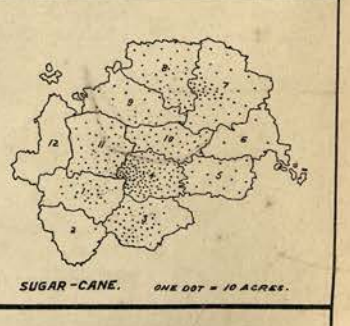


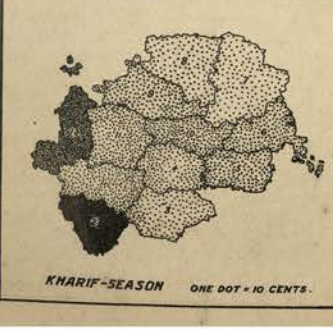


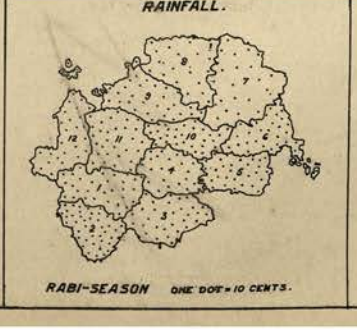


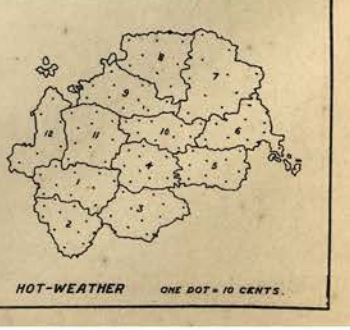












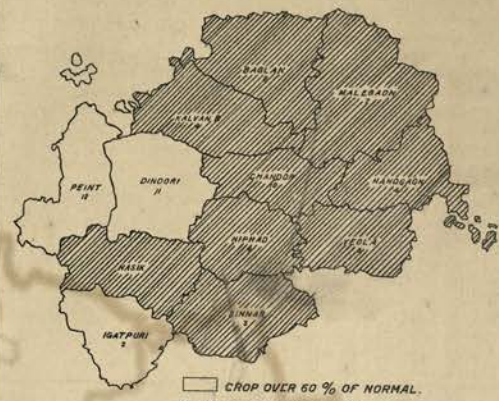
NASIK DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

NOT LIABLE TO FAMINE.
LESS LIABLE TO FAMINE BUT WITH FREQUENT SCARCITY.
VERY LIABLE TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.



CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1918-19.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1920-21.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

NUMBER OF CATTLE.

1909-10

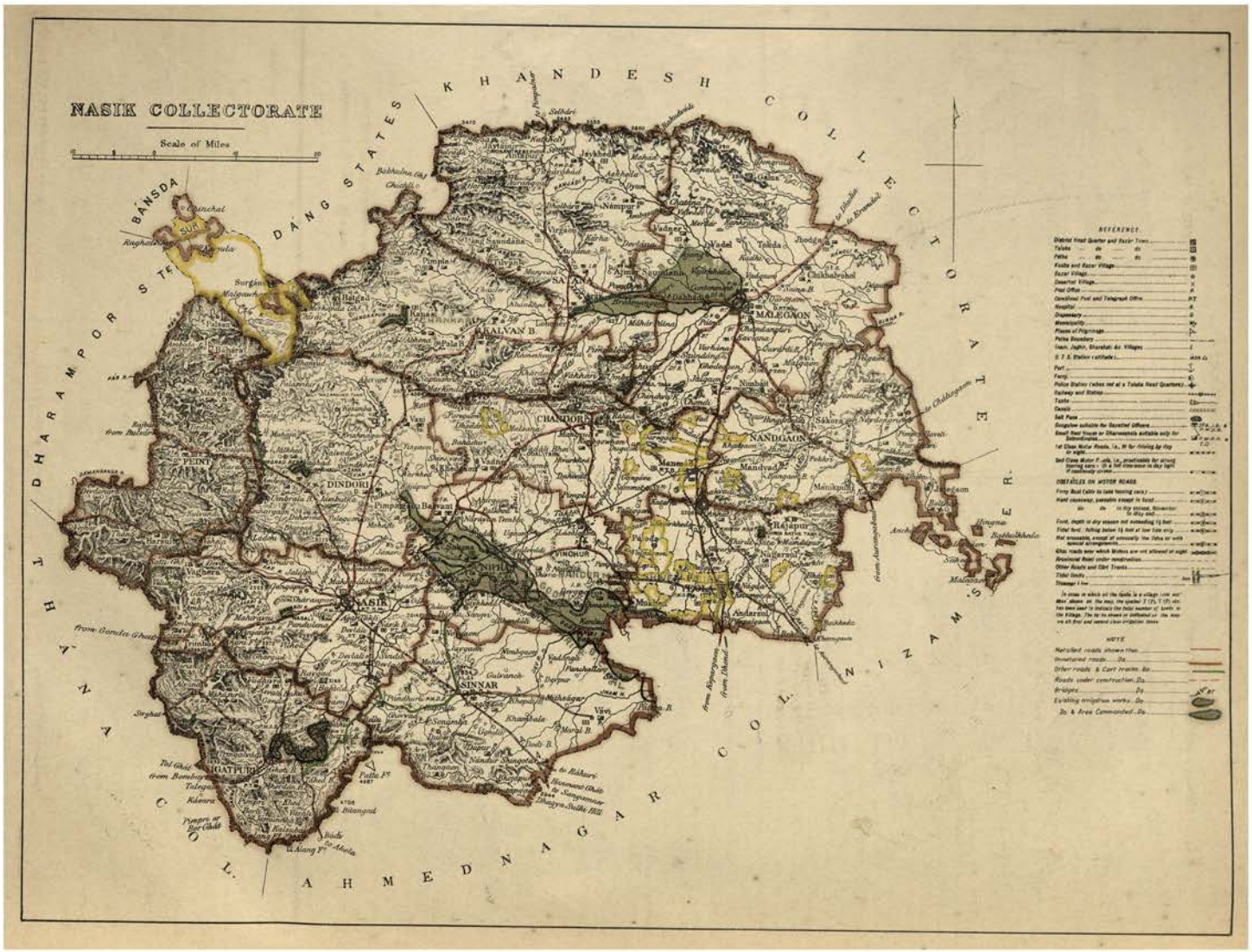
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE

1919-20

ONE DOT = 1000 CATTLE.


NASIK COLLECTORATE
Scale of Miles
KHANDESH COLLECTORATE
DHARAMPOR STE. DÁNG STATES
BÁNSDA
THÁNA COL.
AHMEDNAGAR COL.
NIZAM'S TER.
MALEGAON
KALVAN B.
CHANDOR
NANDGAON
DINDORI
PEINT
NASIK
SINNAR
IGATPURI
VINCHUR
NIPHUR
REFERENCE.
NOTE

NASIK

POSITION AND AREA

The district of Nasik lies between 19° 35′ and 20° 53′ north latitude and 73° 15′ and 74° 56′ east longitude and has an area of 5,892 square miles. It is bounded on the north and north-east by the two Khandesh districts, on the south-east by the Nizam's dominions, on the south by Ahmednagar and on the west by Thana district, the territories of Dharampur, Surgana and the Dangs.

PHYSICAL FEATURES

With the exception of a few villages in the west the whole district is situated on a table-land at an elevation of from 1,300 to 2,000 feet above the sea. The western portion, from north to south, called Dang, is generally divided by hills and intersected by ravines. The eastern portion called Desh, is open and fertile. Except the line of the Western Ghats, which run from north to south, the general direction of the hills is from west to east, the higher portions being in the west. The Satmala or Chandor range of hills forms the water shed of the district, dividing the valley of the Girna from that of the Godavari. It stretches from Peint east into the Nizam's Dominions. A low range separates Dindori from Nasik. The other important ranges are the Selbari in the extreme north and Delbara a little to its south, both in the Baglan taluka. All streams of any size to the south of the Chandor range are tributaries of the Godavari, the principal being the Darna, Kadva, Deo and Miralgin. In the north of the water-shed the Girna and its tributary the Mosam flow through fertile valleys into the Tapti.

The district differs from the other Deccan districts, in that a portion, *viz.*, the Peint taluka lies west of the crest of the Western Ghats. This taluka, lying six hundred feet below the general elevation of the Deccan table-land, is really part of the Konkan. The division into (1) Dangs, (2) Desh and (3) Transition Tract is strongly marked.

The *Dang* country may, for convenience, be taken to include Peint. It stretches east from the crest of the Sahyadris and varies from ten to thirty miles in width. Its general characteristic is rough, hilly ground, intersected by the beds of torrents. The hills are covered with scrub and on the sides of the higher hills, teak grows freely, becoming large and more valuable in Peint. The Dang hills furnish abundance of fodder, and are yearly resorted to by thousands of cattle from the talukas of the plains. The rainfall of the Dangs is excessive and the climate malarious in the cold season.

The *Desh* includes the Malegaon, Nandgaon, Yeola, Niphad and the eastern portions of Chandor and Sinnar talukas.

The *Transition Tract* includes the rest of Sinnar and Chandor and parts of the Baglan, Kalwan, Dindori and Nasik talukas.

The areas marked in the general famine map as ' very liable ' to famine, very nearly correspond with the Desh portion of the district.

CLIMATE

The climate of Nasik town and of the whole of the west of the district is the best in the Deccan. It varies in different parts, but on the whole presents greater extremes of heat and cold in the east than in the west. In January extreme cold and in April extreme heat are experienced. During the rest of the year, constant breezes from the west and south-west equalise the temperature.

RAINFALL

Rainfall varies considerably in the district. The annual rainfall of Nasik town averages less than thirty inches, while at Igatpuri it is nearly one hundred and thirty inches. The only other tract with a considerable rainfall is Peint where the average is eighty-five inches. At other places the rainfall varies from eighteen inches at Satana (Baglan) to thirty inches at Dindori.

The rainfall is principally from the south-west monsoon. The south-west monsoon rains are preceded by one or two heavy thunder showers from the north-east. The regular monsoon begins in June and ends early in October. A cold weather shower or two may fall but there is seldom any rain from the middle of February till the end of April.

CROPS

Rice and hill-millets are the staples of the Dangs, with nigerseed (*Khurasni*) which is grown in rotation with the millets. The usual rotation is *nachni, sava* and *Khurasni*. After the third year's crop has been reaped, the land lies fallow for several years. In Peint the area of land prepared for rice is comparatively small. Here the cultivation is backward and little labour has been spent in embanking land for rice.

Bajri is by far the most important crop of the district and covers an area exceeding that of all the other cereals together. In no taluka does *Jowari* hold so important a position. This fact at once shows that Nasik depends more on the early monsoon than any other Deccan district. *Bajri* is sown with a mixture of pulses as elsewhere.

Wheat is grown largely in the Desh. The wheat is a fine dry crop hard white. Under irrigation the spelt variety is commonest.

The oil-seeds of the district are important and various. Safflower is grown with *jowar* but not so frequently with wheat as in other parts of the Deccan. Linseed is specially important. The area of niger-seed is also large. Sesame is important and groundnut, a very valuable crop, is extensively cultivated.

Cotton is confined principally to the Desh and is increasing in importance. Sugarcane is grown everywhere except in Peint.

In a normal year *bajri* occupies about eight lakhs of acres, *jowar* and wheat nearly one and a half lakhs of acres each and rice from sixty to seventy thousand acres. Under oil-seeds, niger-seed is by far the most important occupying nearly eighty thousand acres.

The area under sesame is about fifteen thousand acres while that under linseed, groundnut and safflower a little above ten thousand acres each.

SOILS

The soil of the district may be divided into four classes : the reddish-black mould along rivers ; a light black soil higher up ; a brown soil stiffer and shallower, found on the higher lands near the *Ghats* and highest and lightest of all, light brown or red often strewn with boulders and mixed with lime.

CATTLE

On the western side the Baglan taluka is a good breeding ground and produces some fine cattle including Sonkheris. In the Igatpuri and Sinnar talukas, a good useful breed of cattle known as Dongri are bred by professional breeders. On the eastern side of the district there are some extensive grazing grounds in the rough hills, particularly in the north and east of Malegaon and Nandgaon and the villagers breed a fair quality of miscellaneous cattle of the Deccani type, some of which show traces of Malvi blood. The total number of cattle which was nearly seven lakhs at the cattle census of 1915-16 fell down to slightly over five lakhs in 1919-20 due to the severe famine of 1918-19. The number of sheep and goats also was reduced by over a lakh, their number being 235,000 in 1919-20. Of the total number of cattle roughly two-fifths are plough cattle, one-third milch cattle and one-fourth young stock. Of milch cattle there are nearly five times as many cows as buffaloes.

FORESTS

There are 1,075 square miles of forest in the district including three square miles of fuel and fodder reserve, in charge of the Forest Department, besides 162 square miles in charge of the Revenue Department. Of these 162 square miles, 160 square miles are pasture reserves and two, fuel and fodder reserve. The forests fall naturally into two main classes. Those of Peint and parts of Dindori and Nasik talukas, are high forests and produce fine timber, the proportion of teak being over thirty per cent. The remaining forests are very different. While Kalwan and Baglan and the upper parts of Dindori and Nasik talukas contain a moderate proportion of fair teak, the bulk of the species grown is unmarketable. The Malegaon, Nandgaon, Chandor and Sinnar forests are mainly scrub and cactus but in parts have a valuable mixture of *Anjan* which enables the *coupes* to be sold fairly readily. The forests are worked on the system of annual *coupes*, regeneration being effected by coppice, natural seedlings and cultural work. Minor forest produce is sold either on permits as in the case of *bamboos*, grass, stones, thorns, or the right of collecting it is farmed out as for myrabolams, *tarwad* bark, *mowhra* seed and *rosha* grass. Liberal concessions are given in the way of free removal of thorns and shrubs, grass and wild fruits, etc., and by way of a very liberal grazing arrangement whereby cattle, sheep and goats are admitted to many areas which do not produce valuable timber. The number of cattle which graze in these forests is at present about three and a quarter lakhs.

IRRIGATION

The Government Protective Irrigation works in the district are the Girna Left Bank Canal, the Kadva River Works and the Parsul Tank.

Girna Left Bank Canal.—This is a comparatively small irrigation system comprising a storage reservoir at Chankapur and a Canal about nineteen miles

long. The tank is situated immediately below the confluence of the Tambat and Girna rivers, some forty-eight miles north of Nasik, and is formed by a masonry dam 140 feet high. The water in the reservoir when full stands within one foot of the top of the dam and at this level 1,624 million cubic feet of water are impounded. From the tank water is let out into the river and diverted into the Canal by means of a pick-up weir at Thengoda (in Baglan taluka). The work was finished in 1909 and cost about twenty lakhs of rupees. The total culturable area commanded by the canal is 25,200 acres of which 8,500 acres are expected to be irrigated annually.

Kadva River Works.—These consist of three small canals, namely, the Palkhed, Ojar Tambat and Wadali Canals having an aggregate length of about twenty-five miles. The canals were constructed between 1866 and 1870 and in 1878 a storage reservoir was constructed at Waghad so as to provide an assured supply throughout the year. This reservoir has an earthen dam ninety-six feet high and the capacity of the lake is 606 million cubic feet.

Parsul Tank.—This is formed by an earthen dam and is situated on the Parsul river about fifteen miles south-west of Malegaon. The work was started in 1883 and completed in 1889-90. The total capacity is 124½ million cubic feet and that over sill of out-let sluice is nearly 119 million cubic feet, available for irrigation.

The detailed account of the Godavari project has already been noted in the Ahmednagar district account.

There is a number of small tanks for irrigation in the district mainly in the Chandor, Sinnar and Niphad talukas. The number of wells in use for irrigation is over twenty-five thousand. They are chiefly found in Niphad, Sinnar, Chandor, Malegaon and Nasik talukas.

DRINKING WATER

The condition of the drinking water supply is getting worse in the eastern villages of the talukas of Nasik, Dindori, Niphad and Sinnar. Villages in the Malegaon taluka lying on the banks of the Girna and Mosam rivers have a sufficient supply for drinking purposes. In the rest of the talukas some difficulty is experienced in the hot season. In years of deficient rainfall the water difficulty is felt in Chandor and Nandgaon talukas. In Baglan the drinking water supply is generally good. In Kalwan and Peint the supply is inadequate in the hot season. In Yeola taluka the water difficulty is common everywhere and is particularly acute in Yeola town.

MANUFACTURES

Nasik city was formerly noted for the production of artistic brass and copper ware on a large scale. The number of workers is now nearly five thousand but the quality of the work is not up to the former standard. There is a number of cotton gins and cotton presses in the district. Yeola, Malegaon and Sinnar are important hand-loom weaving centres.

TRADE

The principal articles of export are grain, oil-seeds, cotton-cloth and silk-goods, copper, brass and silver ware and a considerable amount of garden produce consisting of grapes, onions, garlic and betel-leaves. The chief imports are raw silk, cotton thread, copper and brass, sugar, groceries and salt.

COMMUNICATIONS

In point of communication facilities the district possesses unusual advantages. The G. I. P. Railway enters the district at Igatpuri and runs through its entire length as far as Naydongri. The line from Manmad to Hyderabad (Deccan) traverses a few miles of the Nandgaon and Yeola talukas, and the Dhond-Manmad line runs from Manmad to Yeola. The district is also well served by metalled roads of which the Bombay-Agra, the Khandesh-Nizam frontier, the Nasik-Kalwan, the Nasik-Poona and the Ahmednagar-Malegaon are the most important.

RELIGION

The population of the district according to the census of 1921 is 832,576 consisting of 777,857 Hindus, 46,458 Musalmans, 7,270 Christians, 912 Parsis and 79 persons of various other denominations.

LANGUAGES

The vernacular of the district is Marathi spoken by about eighty-six per cent. of the population. The other important languages are Hindi (Hindusthani) spoken by about six per cent., Bhil, spoken by nearly four per cent. and Rajasthani spoken by about one and a half per cent. of the population. Besides these Gujarathi is spoken in the houses of a few amounting to nearly one per cent. The dialects of the wandering classes closely resemble Marathi.

BROAD OCCUPATIONS

According to broad occupations 546,028 persons or nearly two-thirds of the population are supported by Agriculture. Industry including mines, and Trade and Transport support about ten per cent. each, the number of persons thus supported being 83,837 and 81,485 respectively. Professions and the Liberal Arts afford the means of livelihood to 9,835 persons or one and a half per cent., while the remainder 111,391 persons or nearly thirteen and a half per cent. are dependent on various occupations for their livelihood.

DETAILED OCCUPATIONS

The following is a somewhat detailed analysis of the population according to occupations and in a few cases according to castes. The figures are for the census of 1921 and represent both workers and dependents.

Pasture and Agriculture.—Of the total population of 554,893 supported by pasture and agriculture as many as 399,834 are ordinary cultivators. The number of farm servants and field labourers is 132,248 while 13,597 persons are dependent on income from rent of agricultural land. The raising of farm stock including cattle, sheep and pig breeders and shepherds and goat-herds, supports 6,093 persons.

Industry.—Under this head may be mentioned the textile workers such as weavers and other workers in cotton, wool, silk, etc., at home and in factories numbering 28,647. Carpenters 6,641 and basket-makers, and workers in cane and bamboos 1,867, chiefly constitute the wood industry. In the metal industry, workers in iron 4,073 and workers in brass and copper 631 are the most important. Potters number 3,184 while there are 905 brick and tile makers. In the food industry, rice-pounders and flour-grinders 287, grain parchers 290, manufacturers of vegetable oil 682, sweetmeat-makers 534, butchers 1,960, and toddy drawers 155 deserve mention. The building industry is mainly composed of brick-layers and masons 3,324, stone-cutters and dressers 1,607, and excavators, earth-workers and well-sinkers 542. Of the persons engaged in miscellaneous industries, tailors 3,849, shoe-makers 6,377, washermen 2,277, and barbers 6,205 are the most prominent. It may be generally remarked that the classes mentioned above now-a-days get sufficient work and adequate wages and as such their condition is good.

Trade.—The trade in food stuffs (excluding hotels) stands first in the class and supports 18,813 persons. Of these, grocers and sellers of oil, salt, condiments and spices, etc., 7,189, sellers of milk, butter, fish, poultry, etc., 2,123, grain and pulse dealers 4,270 and dealers in hay, grass and fodder 4,171 are the chief. The trade in fuel such as fire-wood, cow-dung-cake, etc., is also important and supports 9,195 persons. The number of persons dependent on trade in piece-goods and textiles is 2,043 in the district. Traders as a class are secure.

Professional Beggars.—These number 9,195. As they wander from place to place and readily migrate in times of famine, only a few of them may need relief in times of famine.

Depressed Classes.—The Mahars and Dheds 59,289, Mangs 7,516, Chambhars 9,268 and Bhangis 654 are included under this head. Chambhars or shoe-makers get generally enough work while some of the Bhangis are employed as scavengers in municipal towns and as such their condition is also fair. But some of these and the other depressed classes are likely to need relief in years of severe distress.

Brahmans.—They number 23,484, and are mostly priests, land-holders, Government servants, etc., and have a secure position.

Musalmans (46,458).—They are servants, traders, craftsmen, and labourers and are fairly well off.

Christians (7,270).—Most of them are converts to Christianity. They are generally artizans and skilled labourers and are not likely to require relief.

Parsis (912).—They are traders, contractors, etc., and are well-to-do.

ECONOMIC CONDITION

There is no appreciable change in the economic condition of the people. It is only in the irrigated tracts that their condition has substantially improved. In the Niphad taluka, the Godavari Right and Left Bank Canals have improved the condition of twenty-six villages. Portions of the Palkhed, Ojhar and Vadali Canals irrigate twenty-one villages in the same taluka. The rest of this taluka and the eastern part of Sinnar taluka now only usually get a precarious rainfall. In the town of Malegaon the *Momins* turn out coarse *Saris* and sell them to local merchants, who export them to Khandesh and the Berars. Yeola is noted for its gold lace work but it does not help the agriculturists in times of scarcity, as the work requires skill and training.

Migration.—In times of famine and scarcity the people in the affected areas go to Bombay, Khandesh and Berar in search of labour. The people in Nandgaon taluka get employment in the Railway Workshops at Nandgaon and Manmad. Sugarcane crushing in Kopergaon in the Ahmednagar district attracts labour from Yeola and Nandgaon talukas in times of scarcity. Villages having land under irrigation also absorb a small number of agriculturists.

FORMER FAMINES

In **1876-77** the distressed area was about one-third of the district and though the distress at its height was great, it did not reach the stage of famine. The highest daily average of relief workers was only eighteen thousand in January 1877 and no special relief staff or relief houses were found necessary.

In **1896-97** the distress was greater but was mainly due to high prices of food and did not reach the acute stage. The condition of the western portion was fair but in the Desh, there was practically no rain after September and the talukas of Malegaon, Nandgaon, Chandor, Niphad, Yeola and Sinnar suffered rather severely. With useful rain in July and August 1897 relief works were all closed in the following October.

In **1899** there was a general failure of the rainfall ; at Niphad the total fall was only 4·92 inches. The crop outturn of the district was estimated at twenty per cent. of the normal. The whole district was affected and the famine was again most acute in the Desh tract. In 1900 the rainfall was variable and failed after September but the distress was by no means so severe as in the previous year.

The year **1901-02** was also below normal but no relief measures were necessary.

After 1901-02 the years **1905-06** and **1911-12** were lean years but in these years the conditions were nowhere so acute as to amount to famine.

In **1918-19** there was a general failure of the rainfall with the result that the *kharif* crop was poor in the Dangi part of the district and a failure elsewhere, whilst the *rabi* crop failed everywhere. The worst affected part were the eastern talukas, *viz.*, Nandgaon, Malegaon, Yeola, Chandor, Niphad and Sinnar, that is, half of the district. The eastern parts of Baglan, Kalvan, Dindori, Nasik and Igatpuri were affected in a lesser degree, while the western part of these talukas and the whole of Peint were almost normal, except for the general effects of high prices. No test or relief works were opened. No Government dole to the public was given and no Government poor-houses were started. Hard cases were met by charitable organisations. The inferior village servants were relieved by doles.

In **1920-21** the rainfall on the whole was insufficient and disappointing. With the exception of the talukas of Igatpuri and Peint and a part of Sinnar the yield of crops was very poor. The affected parts were generally the same as in 1918-19. The distress was keen all over the affected parts. There was no public relief except to village servants in affected areas. No test or relief works were opened. No Government dole to the public was given, and no poor-houses were started. Charitable organisations afforded relief in hard cases.

FORECAST OF RELIEF WORKERS

Weavers and other artisans do not ordinarily require relief in times of scarcity. Agriculturists now migrate in large numbers to places where they can get employment. It is not, therefore, necessary to make an estimate for the provision of relief to twenty per cent. of the population as was done in previous famines. Relief would only be required for old and decrepit people who cannot leave their homes and their number would in no case exceed five thousand.

NASIK STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

Irrigation Abstract, 1922-23.

Cultivated and Uncultivated Area, 1918-19.

Irrigation Abstract, 1918-19.

Crops, 1922-23.

Crops, 1918-19.

Agricultural Stock, 1915-16.

Agricultural Stock, 1919-20.

NASIK STATISTICAL TABLES—II.

Water Supply 1922-23.

No.	Taluka.	Government Canals. For irrigation.	Government Canals. For drinking.	Government Canals. For Cattle and Washing.	Private Canals. For irrigation.	Private Canals. For drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Tanks. For drinking.	Tanks. For Cattle and Washing.	Other Sources. For irrigation.	Other Sources. For drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.			
1	Nasik ..	..	..	..	..	..	..	406	2,393	2,799	555	116	48	5	15
2	Igatpuri ..	..	..	..	..	..	..	51	87	138	477	36	..	..	19
3	Sinnar ..	1	..	..	..	..	..	1,158	2,437	3,595	557	152	110	..	9
4	Niphad ..	2	..	..	..	..	..	574	3,343	3,917	868	51	85	..	4
5	Yeola ..	2	..	..	..	..	..	573	1,855	2,228	349	47	13	..	..
6	Nandgaon ..	..	..	..	..	..	..	294	1,175	1,469	437	17	2	..	2
7	Malegaon ..	..	1	..	..	..	..	600	2,448	3,048	1,448	71	22	..	16
8	Baglan ..	..	..	..	..	..	..	247	1,095	1,650	1,325	35	28	..	1
9	Kalwan ..	..	..	..	..	..	..	641	728	1,369	622	43	30	..	..
10	Chandor ..	..	..	..	..	..	..	1,308	1,906	3,214	518	5	324	..	8
11	Dindori ..	..	1	..	..	..	..	180	1,319	1,499	612	50	40	..	5
12	Peint ..	..	..	..	..	..	..	..	..	..	579	10	..	..	1
	Information not available.														
	Total ..	7	..	..	..	..	..	6,252	18,924	25,176	8,377	525	701	15	80

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1-2	Girna Left Bank Canal .. Kadva River Works—	29,182	25,200	8,500	8,500	3,785	3,863	7,648
	(a) Palshet Canal ..	28,832	26,280	23,466	9,837	2,872	1,336	4,208
	(b) Ojhar Tambat Canal	8,055	7,421	6,824	2,367	1,509	507	2,016
	(c) Wadali Canal ..	3,486	2,729	2,433	2,433	1,076	579	1,655
3	Partial Tank ..	3,337	3,197	1,000	1,000	151	102	253
4	Godavari Right Bank Canal ..	Included in Ahmednagar Collectorate				1,286	2,801	4,087
5	Godavari Left Bank Canal ..					1,458	4,918	6,376
	Total ..	72,892	64,827	42,223	24,137	12,137	14,106	26,243

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total No.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Nasik ..	5,417	6,344	1,273	191	3	13,930	176,801	12 7	1 4 0	0 15 8
2	Igatpuri ..	5,080	5,595	1,520	142	3	12,350	158,211	12 8	1 0 2	0 12 6
3	Sinnar ..	4,997	7,477	2,707	222	5	15,408	245,260	15 9	3 6 9	0 14 4
4	Niphad ..	6,199	5,597	1,737	109	7	14,149	183,030	12 9	2 11 8	0 11 0
5	Yeola ..	1,518	3,443	1,656	218	8	6,843	166,564	24 4	4 6 8	0 11 11
6	Nandgaon ..	1,720	3,946	1,482	240	11	7,399	199,003	25 0	4 6 8	0 11 11
7	Malegaon ..	2,577	6,575	2,513	276	17	11,958	297,518	24 9	3 0 2	0 13 6
8	Baglan ..	2,165	4,498	1,992	179	9	9,704	192,080	22 7	3 8 3	0 13 9
9	Kalwan ..	3,099	3,977	70	7	1	7,154	152,307	25 7	3 4 11	0 11 11
10	Chandor ..	3,513	3,965	1,455	144	5	9,095	150,817	17 7	3 11 6	0 11 11
11	Dindori ..	1,486	2,091	193	6	0	12,098	232,999	19 3	3 12 8	0 12 8
12	Peint ..	1,695	3,855	1,332	24	0	6,906	106,249	15 4	2 5 6	0 5 8
	Total ..	40,997	61,000	21,215	2,008	70	125,250	2,238,795	17 8	3 0 8	0 13 5

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per Head of population including Alienations.
		Acres.	Rupees.	Rs. a. p.	No.	Rs. a. p.
1	Nasik ..	157,886	1,54,404	0 15 8	134,629	1 2 4
2	Igatpuri ..	152,633	1,18,986	0 12 6	76,075	1 9 0
3	Sinnar ..	230,498	2,05,897	0 14 4	99,395	3 7 6
4	Niphad ..	163,233	1,44,599	0 14 0	76,810	2 11
5	Yeola ..	150,946	1,13,044	0 11 11	48,417	2 5 4
6	Nandgaon ..	152,456	1,05,914	0 11 1	48,541	2 11
7	Malegaon ..	286,579	2,49,529	0 13 6	100,888	2 6 3
8	Baglan ..	187,659	1,61,099	0 13 9	64,262	2 7 6
9	Kalwan ..	140,894	1,04,950	0 11 11	54,555	2 12 6
10	Chandor ..	142,959	1,06,622	0 11 11	47,206	2 4 2
11	Dindori ..	207,667	1,44,630	0 12 8	63,807	2 9 3
12	Peint ..	105,281	57,466	0 5 8	59,451	0 11 3
	Total ..	2,078,572	17,66,616	0 13 5	832,646	2 1 10

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1-2	Girna Left Bank Canal .. Kadva River Works—	16,582	15,109	5,100	5,100	1,737	2,758	4,495
	(a) Palshet Canal ..	28,832	26,280	23,466	9,837	1,731	739	2,470
	(b) Ojhar Tambat Canal	8,055	7,421	6,824	2,367	703	277	980
	(c) Wadali Canal ..	3,486	2,729	2,433	2,433	736	509	1,245
3	Partial Tank ..	3,337	3,197	1,000	1,000	520	35	555
4	Godavari Right Bank Canal ..	*	*	*	*	941	2,667	3,608
5	Godavari Left Bank Canal ..	*	*	*	*	938	4,546	5,484
		* Included in Ahmednagar Collectorate; separate figures not available.						
	Total ..	62,692	54,736	42,223	20,737	7,306	11,531	18,837

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1	Nasik ..	Maximum 1883 ..	2·44	..	..	0·25	0·62	13·69	13·30	6·63	12·19	13·71	0·04	0·22	62·62
		Minimum 1899 ..	..	..	..	1·90	2·18	1·02	0·89	3·31	0·89	..	..	0·18	14·57
		Average ..	0·10	0·04	0·03	0·92	5·57	8·67	5·09	5·93	2·81	0·46	0·18	0·92	29·96
		Rainfall for 1922-23 ..	..	0·10	1·51	..	4·52	4·71	2·25	3·98	1·83	2·01	..	..	19·88
		Maximum 1914 ..	..	..	..	0·02	17·96	60·68	18·99	20·34	7·83	0·06	..	..	119·88
2	Trimbak D.	Minimum 1918 ..	..	..	..	4·76	5·01	10·20	20·28	2·89	..	0·08	..	..	53·25
		Average ..	0·13	0·18	0·03	0·14	17·40	33·15	20·28	11·55	3·32	0·06	0·13	0·20	86·45
		Rainfall for 1922-23 ..	..	0·15	0·24	..	15·46	33·61	20·81	16·20	1·13	0·76	..	..	88·49
		Minimum 1887 ..	..	..	..	0·73	2·98	12·96	10·81	3·88	2·98	3·22	..	..	17·09
3	Igatpuri ..	Minimum 1899 ..	..	..	..	0·55	28·75	21·84	11·22	2·42	..	..	..	..	64·78
		Average ..	0·11	0·05	0·01	6·90	25·10	49·74	30·25	16·59	3·25	0·60	0·15	0·26	128·81
		Rainfall for 1922-23 ..	..	0·11	0·32	1·29	17·13	50·28	30·51	22·45	3·62	1·30	..	..	127·01
		Maximum 1883 ..	0·14	..	..	0·41	7·88	8·31	5·34	7·39	10·69	..	..	..	39·96
4	Sinnar ..	Minimum 1876 ..	..	..	..	..	..	4·05	3·02	1·03	..	0·40	..	..	8·50
		Average ..	0·10	0·04	0·03	0·20	0·88	4·20	5·96	5·47	4·95	2·55	0·20	0·22	22·52
		Rainfall for 1922-23 ..	..	..	0·34	0·93	0·18	2·35	9·53	7·49	4·96	2·80	0·04	0·26	17·56
		Maximum 1883 ..	..	..	..	..	0·62	6·12	7·39	7·34	11·90	6·45	1·30	..	43·10
5	Niphad ..	Minimum 1899 ..	..	..	..	..	0·87	4·06	0·38	0·22	1·00	0·09	..	..	4·92
		Average ..	0·08	0·01	0·02	0·07	0·89	4·39	4·73	3·06	5·63	1·94	0·60	0·17	21·99
		Rainfall for 1922-23 ..	..	0·01	1·25	0·74	0·11	1·61	6·95	2·43	7·81	1·34	0·29	0·49	12·32
		Maximum 1897 ..	..	..	..	..	3·18	6·79	4·59	13·34	7·39	..	..	..	35·29
6	Pimpalgaon D.	Minimum 1920 ..	1·02	0·03	..	0·50	0·63	0·92	1·47	3·71	0·58	..	..	..	8·41
		Average ..	0·09	0·03	0·06	0·11	0·93	4·92	6·00	3·61	5·02	1·99	0·48	0·13	23·37
		Rainfall for 1922-23 ..	..	..	0·32	0·29	..	1·17	2·99	0·85	1·55	2·54	1·05	..	10·36
		Maximum 1892 ..	..	..	..	..	0·61	4·94	6·69	15·54	5·44	2·67	1·49	..	39·91
7	Yeola ..	Minimum 1920 ..	1·25	..	..	0·14	0·29	1·22	1·65	1·60	2·01	0·24	..	..	8·90
		Average ..	0·16	0·07	0·05	0·18	0·95	4·25	3·05	5·66	2·79	0·85	0·24	0·21	21·62
		Rainfall for 1922-23 ..	..	..	0·82	0·27	0·10	1·95	1·14	0·77	3·07	0·24	..	..	11·18
		Maximum 1897 ..	..	..	..	..	0·91	5·28	8·66	8·49	1·46	12·19	0·61	..	47·64
8	Nandgaon ..	Minimum 1899 ..	..	..	..	0·35	0·46	3·91	0·43	1·53	0·42	..	0·05	..	6·25
		Average ..	0·22	0·06	0·06	0·10	0·75	4·38	4·64	3·57	6·94	1·99	0·90	0·21	24·03
		Rainfall for 1922-23 ..	..	..	0·86	0·39	0·96	3·08	0·28	0·95	0·51	2·61	..	..	21·74
		Maximum 1884 ..	0·54	..	..	..	0·49	3·75	9·53	2·15	13·56	3·03	..	4·53	37·58
9	Malegaon ..	Minimum 1899 ..	..	..	..	0·82	0·39	1·60	0·10	0·82	1·01	2·56	0·02	..	8·16
		Average ..	0·21	0·07	0·06	0·10	0·89	4·35	4·61	3·11	5·81	1·90	0·61	0·19	21·91
		Rainfall for 1922-23 ..	..	..	0·89	..	0·47	2·28	0·66	1·77	0·04	0·73	..	..	11·84
		Maximum 1882 ..	..	..	..	..	0·97	9·21	2·70	1·56	27·95	..	..	..	41·99
10	Satana (Baglan) ..	Minimum 1918 ..	..	0·06	..	..	0·64	1·82	1·10	1·48	2·76	..	..	..	7·80
		Average ..	0·16	0·07	0·04	0·09	0·74	4·33	2·34	3·91	11·35	0·68	0·08	0·03	23·65
		Rainfall for 1922-23 ..	..	..	2·06	0·30	0·58	4·10	2·73	0·99	5·72	3·79	1·08	..	30·95
		Maximum 1882 ..	..	..	..	..	..	3·52	17·56	24·12	18·86	8·88	..	..	72·94
11	Kalwan ..	Minimum 1899 ..	..	..	..	0·66	4·58	0·84	1·15	3·34	0·99	..	..	..	11·56
		Average ..	0·12	0·07	0·05	0·13	1·15	4·96	7·41	4·64	5·52	2·41	0·68	0·14	26·51
		Rainfall for 1922-23 ..	..	0·03	1·19	2·08	..	3·42	3·43	1·79	3·94	1·96	0·83	0·99	18·76
		Maximum 1882 ..	..	..	..	..	0·69	12·52	6·23	2·31	20·33	6·09	1·07	..	42·94
12	Chandor ..	Minimum 1876 ..	..	..	..	..	..	..	5·32	2·37	0·69	..	0·39	..	8·77
		Average ..	0·14	0·06	0·08	0·10	1·33	5·10	6·19	4·11	6·02	2·22	0·82	0·21	26·78
		Rainfall for 1922-23 ..	..	..	0·66	..	1·64	3·40	3·03	1·41	3·02	1·04	1·81	..	16·01
		Maximum 1893 ..	0·30	..	..	0·26	8·34	13·14	7·73	13·60	7·35	4·70	..	..	54·17
13	Dindori ..	Minimum 1899 ..	..	..	..	..	0·74	2·05	1·39	3·24	1·04	..	..	..	8·42
		Average ..	0·11	0·04	0·05	0·14	0·81	5·63	8·94	5·88	5·35	2·33	0·63	0·15	30·06
		Rainfall for 1922-23 ..	..	..	0·86	0·45	..	3·22	5·02	3·22	2·96	2·71	0·90	..	19·73
		Maximum 1893 ..	0·63	..	..	..	1·81	20·23	49·19	14·15	25·61	8·58	..	..	121·10
14	Peint ..	Minimum 1899 ..	..	..	..	..	0·19	2·19	7·51	6·68	1·64	..	..	..	18·22
		Average ..	0·12	0·09	0·01	0·02	0·74	11·79	32·02	25·45	11·01	2·49	0·45	0·05	84·74
		Rainfall for 1922-23 ..	..	0·11	0·47	..	..	19·86	30·52	18·83	26·71	3·89	1·04	..	101·45

Temperature Details (Nasik).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	81	84	90	99	101	84	80	78	80	86	77	74
	minimum ..	49	56	59	70	72	72	71	69	68	64	56	52
	Absolute maximum ..	92	90	98	104	104	100	82	82	88	92	80	78
	minimum ..	46	42	52	62	70	68	70	66	64	54	52	44
1914	Mean maximum ..	76	80	93	96	100	88	79	78	79	77	82	80
	minimum ..	52	54	57	67	74	73	71	70	70	66	61	53
	Absolute maximum ..	80	92	100	104	104	92	86	83	87	91	88	83
	minimum ..	48	46	50	62	70	70	69	68	67	58	52	49
1915	Mean maximum ..	79	84	91	96	97	94	76	81	84	88	90	80
	minimum ..	51	49	51	68	73	72	71	70	68	64	60	50
	Absolute maximum ..	84	94	98	104	102	102	90	84	90	92	96	83
	minimum ..	43	43	56	62	68	70	69	68	66	55	52	44
1916	Mean maximum ..	82	83	96	99	99	88	86	81	85	86	85	79
	minimum ..	50	53	63	68	72	70	70	69	68	66	59	50
	Absolute maximum ..	86	92	102	102	108	94	96	85	90	90	90	84
	minimum ..	46	46	52	64	68	66	68	67	66	62	52	44
1917	Mean maximum ..	82	87	94	96	96	101	98	92	91	97	84	80
	minimum ..	48	50	54	64	69	72	71	68	69	72	60	56
	Absolute maximum ..	84	90	96	102	102	102	106	94	94	99	88	82
	minimum ..	42	44	50	54	62	72	69	67	68	70	51	60
1918	Mean maximum ..	79	86	94	98	95	86	84	83	85	94	90	83
	minimum ..	56	58	67	70	76	74	73	70	70	67	65	57
	Absolute maximum ..	84	90	99	104	102	87	85	85	87	93	91	84
	minimum ..	50	47	61	63	71	72	72	72	68	65	50	50
1919	Mean maximum ..	83	87	94	100	88	84	81	84	86	88	86	81
	minimum ..	57	58	65	72	75	73	72	72	69	66	55	55
	Absolute maximum ..	87	90	100	105	100	90	85	87	93	94	93	84
	minimum ..	45	46	60	68	72	73	70	70	70	63	60	42
1920	Mean maximum ..	79	84	93	99	98	90	83	83	85	90	87	85
	minimum ..	58	57	64	71	73	75	73	71	71	69	60	53
	Absolute maximum ..	86	92	101	104	101	102	90	86	90	95	90	88
	minimum ..	50	48	59	65	70	70	71	69	69	60	53	49
1921	Mean maximum ..	85	91	98	103	101	93	84	81	81	88	85	82
	minimum ..	56	56	65	73	74	75	74	72	70	67	57	55
	Absolute maximum ..	87	95	103	107	99	99	90	85	85	89	87	84
	minimum ..	44	52	58	67	72	73	72	70	68	56	55	52
1922	Mean maximum ..	82	86	95	100	100	88	84	79	79	79	79	73
	minimum ..	56	57	64	71	75	75	74	69	69	69	62	58
	Absolute maximum ..	86	94	102	107	106	94	85	80	80	80	80	81
	minimum ..	50	49	56	64	71	74	70	68	66	53	53	54

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur-Dal.	Jowari-Kadbi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Nasik ..	25	26	15	14	..	91	0 11 4	0 4 8	0 4 10
	Non-headquarter towns.									
2	Igatpuri ..	25	18	12	..	..	116	1 0 0	0 3 10	0 3 1
3	Sinnar ..	22	27	16	15	..	116	0 12 9	0 5 3	0 3 2
4	Niphad ..	24	24	17	17	..	128	0 9 6	0 4 0	0 3 6
5	Yeola ..	28	27	13	15	73	98	0 12 1	0 4 0	0 3 3
6	Nandgaon ..	33	28	14	15	..	116	0 10 8	0 4 0	0 3 3
7	Malegaon ..	28	29	13	14	91	85	0 12 5	0 4 0	0 4 8
8	Baglan (Satana) ..	..	27	14	15	..	198	0 10 8	0 4 0	0 2 8
9	Kalwan ..	..	27	14	15	..	198	0 12 0	0 3 4	0 2 8
10	Chandor ..	36	26	13	16	..	107	0 8 9	0 3 0	0 3 3
11	Dindori ..	..	24	16	14	..	85	0 9 10	0 2 6	0 3 8
12	Peint ..	25	20	17	11	..	116	0 12 0	0 2 7	0 2 1
	Average of the Non-headquarter towns..	27	26	15	14	82	124	0 11 1	0 3 7	0 3 2

Prices, 1922-23.

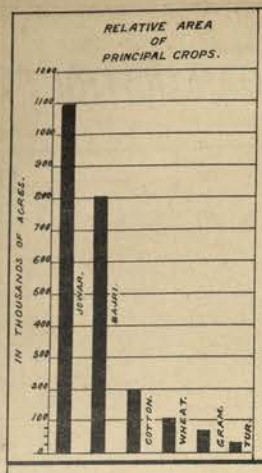
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur-Dal.	Jowari-Kadbi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Nasik ..	..	15	9	9	..	74	1 8 0	0 8 0	0 6 0
	Non-headquarter towns.									
2	Igatpuri ..	..	14	10	8	..	68	1 8 0	0 8 0	0 6 0
3	Sinnar ..	..	16	7	7	..	62	1 4 0	0 6 0	0 4 0
4	Niphad ..	..	14	7	7	..	98	1 0 0	0 7 4	0 5 0
5	Yeola ..	19	16	9	10	46	..	1 4 0	0 6 0	0 4 0
6	Nandgaon ..	18	15	9	9	116	..	1 4 0	0 8 0	0 6 0
7	Malegaon ..	..	..	..	..	..	54	1 4 0	0 5 0	0 4 0
8	Baglan (Satana) ..	..	19	10	9	..	..	1 0 0	0 12 0	0 6 0
9	Kalwan ..	..	18	10	9	..	64	1 0 0	0 4 8	0 4 8
10	Chandor ..	..	16	9	9	..	54	1 0 0	0 5 0	0 4 0
11	Dindori ..	..	15	11	10	..	68	1 4 0	0 6 0	0 4 0
12	Peint ..	..	13	11	7	..	64	1 2 0	0 6 0	0 5 0
	Average of the Non-headquarter towns..	18	16	9	9	34	76	1 3 8	0 6 9	0 5 11

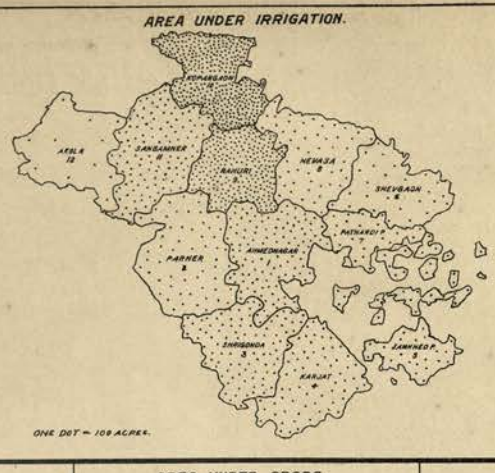
Famine Relief—Average Daily Number.

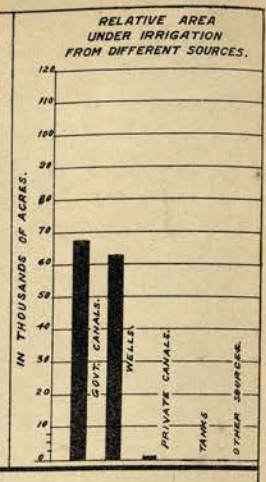
Month.	1911-12. Relief Workers.	Dependants.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependants.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependants.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
	No Relief Works were opened.																	
Average for the period ..																		

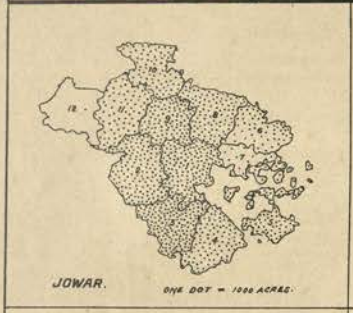
AHMEDNAGAR DISTRICT

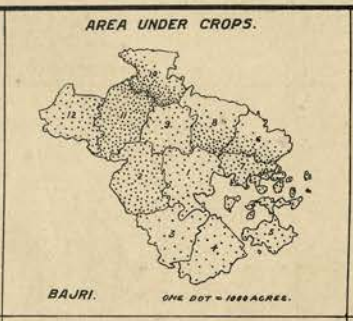
AHMEDNAGAR DISTRICT.

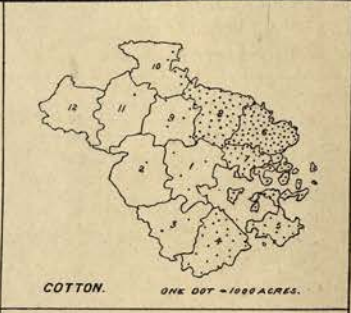


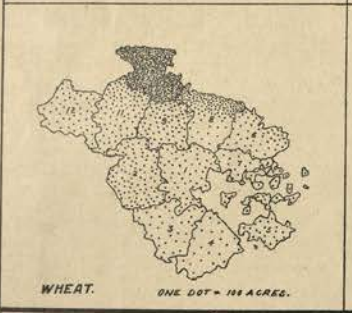


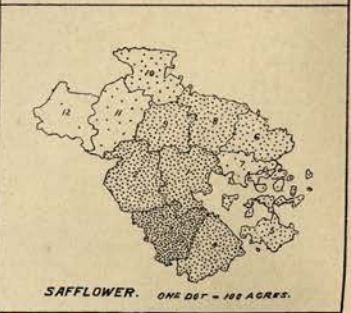


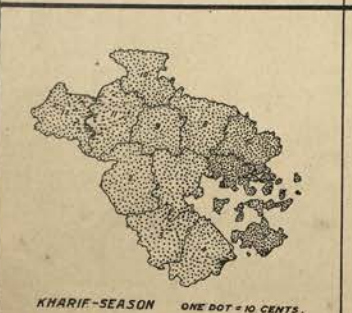












AHMEDNAGAR DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

NOT LIABLE TO FAMINE.
LESS LIABLE TO FAMINE BUT WITH FREQUENT SCARCITY.
VERY LIABLE TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1918-19.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1920-21.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

NUMBER OF CATTLE.

1909-10

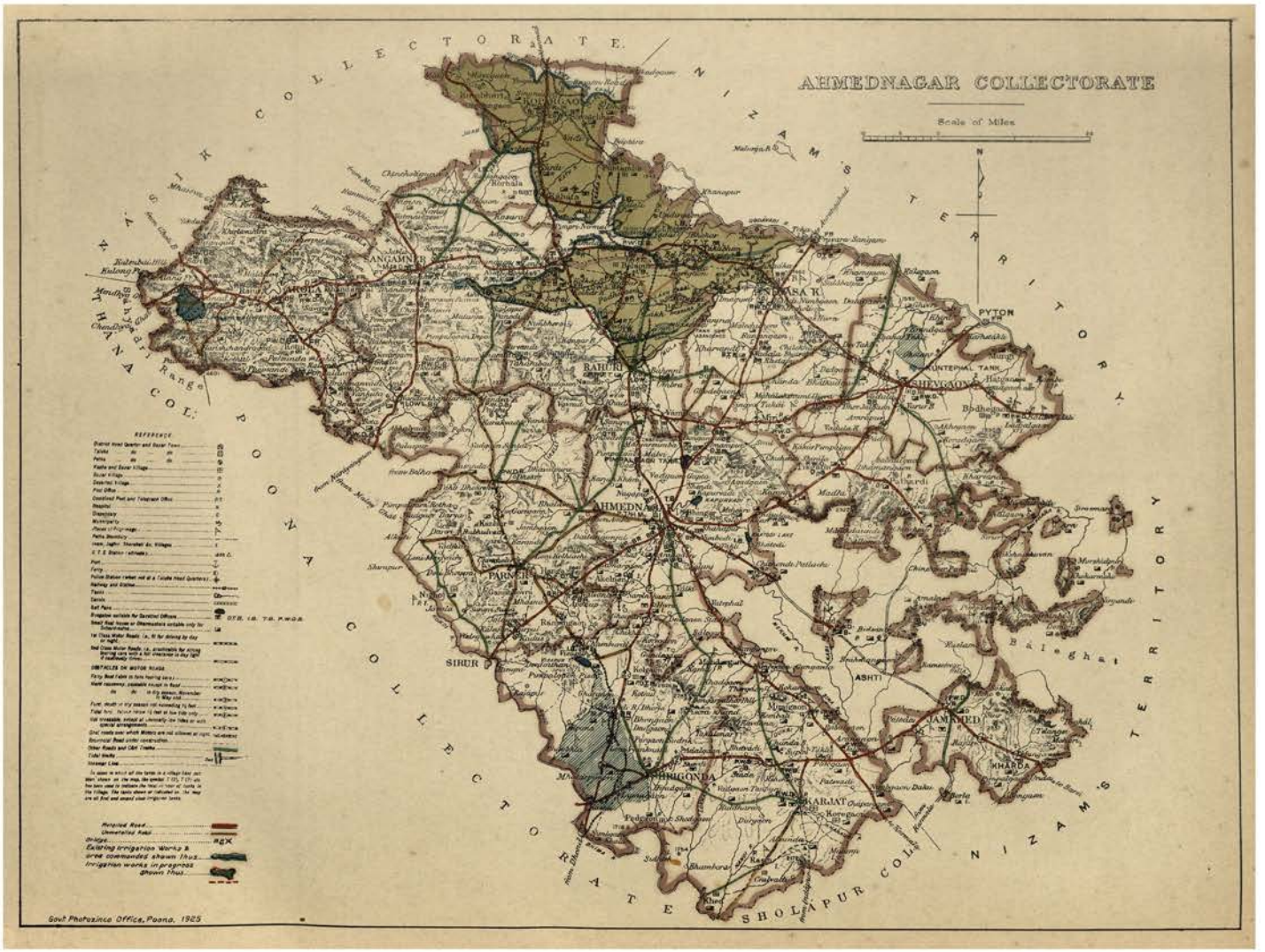
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


AHMEDNAGAR COLLECTORATE
Scale of Miles
N
NASIK COLLECTORATE
NIZAM'S TERRITORY
POONA COLLECTORATE
SHOLAPUR COL.
THANA COL.
KOPARGAON
SANGAMNER
NAVAKOLA
RAHURI
NEVASA K.
PYTON
SHEVGAON
AHMEDNAGAR
PARNER
SIRUR
SHRIGONDA
KARJAT
ASHTI
JAMKHED
KHARDA
Bâleghat
Sahyadri Range
REFERENCE
Metalled Road
Unmetalled Road
Bridge
Existing irrigation Works & area commanded shown thus
Irrigation works in progress shown thus
Govt Photozinco Office, Poona, 1925

AHMEDNAGAR

POSITION AND AREA

The district of Ahmednagar lies between 18° 20′ and 19° 59′ north latitude and 73° 37′ and 75° 41′ east longitude and occupies an area of 6,629 square miles. To the north-west and north lies Nasik district ; on the north-east the line of the Godavari river separates Ahmednagar from the Dominions of the Nizam ; on the extreme east, from the point where the boundary leaves the Godavari to the extreme northern point of Sholapur district, it touches the Nizam's Dominions, a part of the frontier being marked by the river Sina ; on the south-east and south-west lie the districts of Sholapur and Poona, the limit towards Sholapur being marked by no natural boundary but to the south-west the line of the Bhima river and its tributary the Ghod separate Ahmednagar from Poona ; and farther north the district stretches westward till its lands and those of Thana meet on the slopes of the Western Ghats.

PHYSICAL FEATURES

Except in the east, where the Dominions of the Nizam surround Jamkhed Mahal and run inwards to within ten miles of Ahmednagar city, the district is compact and unbroken by the territories of Indian States or out-lying portions of other British districts.

MOUNTAINS

The principal geographical feature of the district is the chain of the Western Ghats, which extends along a small portion of the western boundary, and throws out three great spurs and ridges towards the east. These spurs continue to run eastwards into the heart of the district, the valleys between them forming the beds of the Pravara and Mula rivers. From the right bank of the Mula the land stretches in hills and elevated plateaux to the Ghod river, the south-western boundary of the district. Except near the centre of the eastern boundary, where the hills rise to a considerable height, the surface of the district eastwards, beyond the neighbourhood of the Ghats, becomes gradually less broken.

RIVERS

The chief river of the district is the Godavari, which for about forty miles forms the boundary on the north and north-east. The streams of the Pravara and Mula, flowing eastwards from the Western Ghats along two parallel valleys unite and after a joint course of about twelve miles fall into the Godavari in the extreme north-east of the district. About twenty-five miles below the junction of the Pravara, the Godavari receives on its right bank the Dhora, which rises in the high land in the east and runs a northerly course of about thirty-five miles. The southern parts are drained by two main rivers, the Sina and the Ghod, both tributaries of the Bhima. Of these, the Sina, rising in the highlands to the right of the Mula, flows in a straight course towards the south-east. The river Ghod rising in the Western Ghats and flowing to the south-east joins the Bhima and separates the districts of Ahmednagar and Poona. Then the Bhima itself continues for about thirty-five miles to form the boundary between the two districts. Besides these main rivers, there are several tributary streams and water-courses, many of which in ordinary seasons continue to flow throughout the year.

The division into *Desh* or plain and *Dang* or hilly country—a word almost equivalent to the Kanarese term *Mallad*—applies to the district. The *Dangs* are not extensive. They are confined to the western half of the Akola taluka which reaches the crest of the Sahyadris or Western Ghats. The *Desh* presents an almost endless variety of aspect. In the Godavari valley are the fertile alluvial plains of Kopergaon, Rahuri, Nevasa and Shevgaon, growing wheat, millets, cotton and oilseeds. In the south lie the alluvial, though less fertile, tracts of Shrigonda and Karjat in the Bhima valley. Between these valleys there is every variety of bare hill and cultivated dale in the Sangamner, Parner and Nagar talukas and Jamkhed Mahal.

RAINFALL

The contrast presented by the Dangi villages of west Akola is very striking. Their rainfall is as high as two hundred inches or about ten times as heavy as that of the major part of the district. But the transition to *Desh* is very sudden so that at Akola itself the average rainfall is twenty-one inches only. The rainfall is practically certain in the *Dangs* but often excessive, permitting only the cultivation of rice and hill-millets. It failed, however, in 1899 and was very deficient in 1918, but such cases are exceptional. The rainfall is more even and more seasonable in Jamkhed than elsewhere. This mahal holds in the Ahmednagar district a position very similar to that enjoyed by the Barsi taluka of Sholapur. In both cases the better rainfall is due to the proximity of the Balaghat range of hills which runs between them. The rainfall is most uncertain and precarious in Shrigonda and Karjat but hardly more trustworthy in the Godavari valley. The central portions of the district receive rain which is slightly more seasonable and greater in quantity. The rainy season begins in the *Dangs* in early June but it closes early. In the *Desh* light showers may come in June, but steady rain cannot be looked for till July. In the *Desh*, however, the monsoon from the north-east slightly prolongs the rainy season. The south-west monsoon usually closes early in October though local showers occur till the end of the year. In January and February slight rain is not unusual.

CLIMATE

The climate on the whole is extremely genial. In the cold season the air is dry and invigorating. A hot dry wind from the north-east sets in during February and lasts till the middle of May. From that date till the monsoon breaks, the weather is sultry and oppressive except when tempered by occasional showers. The climate is temperate and pleasant during the monsoon.

SOIL

The three chief kinds of soil in the district are black (*kali*), red (*tambat*) laterite, and grey of inferior quality (*barad*) including white (*pandhri*). The sub-divisions of these soils are numerous and their names differ in different parts of the district.

In the hilly west of Akola a red soil deeper on the slopes than on the levels grows magnificent trees. In the plain lands (*desh*) of Akola and in Sangamner, along both banks of the Pravara, the soil is extremely rich and gradually grows poorer as it draws near the hills.

The Kopergaon plain has in general a good depth of soil and near the Godavari there are many wide tracts of deep rich land. In Rahuri the soil is generally black, deep and rich and in parts near the river clayey.

In Nevasa and Shevgaon the soil is good and with careful tillage is capable of yielding rich crops. But it varies considerably in character.

The southern portion including the talukas of Ahmednagar, Parner, Shrigonda and Karjat with its cross ranges of hills has deep-soiled table-lands (*pathars*) in the west, rich valleys, and a few levels with good soil. Most of the plain land, however, is poor and shallow, suitable only for the growth of millets. In the south-east the soil of Jamkhed is generally light and easily worked. Low levels of reddish land (*munjal*) are here mixed with stretches of poor soil and separated by low ridges and waving uplands.

CROPS

Bajri is the staple food in the Desh, and is grown in light lands everywhere, as largely as the capricious rainfall will permit. When owing to the failure of sowing rains *bajri* cannot be put into the ground, *jowar* or gram are sown in the *bajri* fields. *Bajri* is seldom planted alone. Rows of *tur* mixed with other pulses and oilseeds are almost invariably seen. *Jowar* is a more important crop than *bajri* occupying in most years a much larger area than the latter. It (*jowar*) is almost entirely a late crop, sown with rows of safflower. Hot weather *jowar* (*kadval*) is sown where irrigation is available. Wheat is grown as a dry crop either alone or mixed with rows of safflower. The variety is a high class hard white, with a tendency to softness in seasons when late rain falls. In some lands a very fine kind of hard white (*bakshi*) is grown under irrigation, but as elsewhere, its liability to rust induces a far greater area of the rust-proof spelt—a poor red grained variety. In the Parner taluka, in the more elevated plateaus, *bakshi* is grown as a dry crop. Spelt wheat is sometimes taken as a late crop when irrigation is available after *bajri* has been reaped. Rice is grown in the *Dangs* with the help of *rab* necessitated by the heaviness of the first rains and the early closure of the monsoon. Of oilseeds safflower is by far the most extensively cultivated, occupying more than seventy per cent. of the total area under oilseeds. Sesame, linseed and nigerseed are also grown to some extent. Cotton is an early crop. The cotton talukas are Shevgaon and Nevasa. The area under cotton is very variable as it can only be grown when the early rains are seasonable. The area under sugarcane is now nearly six times what it was twenty years back—due to the extension of irrigation facilities. In a normal year *jowar* and *bajri* occupy from eight to ten lakhs of acres each. Wheat occupies about a lakh of acres and is most important in Kopargaon. Nevasa

and Sangamner are other important centres of cultivation. Rice occupies only fifteen thousand acres and is almost exclusively grown in the Akola taluka. Under oilseeds safflower which ranks first covers one and a quarter lakhs of acres, and is grown throughout the district except west Akola. Cotton is grown to the extent of two lakhs of acres. Of the ten thousand acres under sugarcane Kopergaon alone is an important centre contributing to the extent of eighty per cent. of the total area.

FORESTS

Nearly two-fifths to one-half of the forest area of the district is in the Akola and Sangamner talukas. The commonest tree in the plains is the *babul*. Hill forests belong to three classes : the lower slopes, the central teak region and the evergreen western forests. The lower slopes are bare and yellow broken only by *rui*, the *hekle* and other scrub. The central region possesses teak of excellent quality. It is treated as coppice, the demand being chiefly for poles and rafters. Under the teak, *dhavda*, *khair* and some other kinds of underwood are encouraged. The characteristic trees of the western forests are *anjan*, *jambhul*, *beheda*, *ain* and *karwand*.

CATTLE

In parts of the Akola and Sangamner talukas there is a fair amount of natural grazing and Akola produced some good specimens of the *Dangi* breed, while Sangamner aspires to produce Mhasvad *Khillaris*. The other parts of the district are frequently liable to famine and the tendency of the people is more to develop paying crops like cotton than to breed cattle. Owing to the very severe famine of 1918-19 the total number of cattle fell from seven lakhs in 1915-16 to about five lakhs in 1919-20. Young stock suffered most ; milch cattle came next, but plough cattle though considerably reduced were comparatively better preserved. Sheep and goats also suffered terribly in the famine, their number being reduced to nearly half (about three and a half lakhs) of what it was in 1915-16.

IRRIGATION

The Godavari canal system is one of the most important irrigation works in the district. This is the first of the important irrigation works undertaken in the Central Deccan for the protection of the area liable to famine. Its construction was started in 1906 and completed in 1915-16 at a cost of a little over one crore of rupees. The Godavari Canals System comprises (*i*) a storage reservoir named Lake Beale on the Darna river, a tributary of the Godavari with a capacity of 8,818 million cubic feet, (*ii*) a pick up weir at Nandur —Madhmeshwar on the latter river, and (*iii*) two canals, the Godavari Right and Left Bank Canals of an aggregate length of 117 miles, taking off from the pick up weir. The development of irrigation on these canals is fully up to expectations and sugarcane cultivation is steadily increasing

Pravara River Works.—This system, which is approaching completion, comprises (*i*) a storage reservoir called Lake Arthur Hill on the Pravara river at Bhandara, twenty-nine miles by road from Igatpuri, (*ii*) a pick up weir at Ojar, fifty miles down the river, and (*iii*) two canals, the Pravara Right and Left Bank Canals of an aggregate length of eighty-one miles. Work on these canals was started in 1907-08 and they are now almost completed. The masonry dam will be 270 feet high and about sixteen hundred feet long. When completed the storage will amount to 10,831 million cubic feet (to be increased later to 12,894 million cubic feet) and will protect an area in the Ahmednagar district that in the past has been frequently affected by famine. The culturable area commanded is 182,976 acres, of which 57,000 acres are expected to be irrigated annually and 75,000 acres when the storage is increased. The whole scheme is expected to be completed in 1924 at an estimated cost of about one crore and a half of rupees. Irrigation is being developed at a satisfactory rate.

Lakh Canal.—This is an old single bank canal, which draws its supply from the Pravara river in the Ahmednagar district. It came first into operation in 1869-70. Its supply is entirely dependent on the river flow, which is picked up by a weir at Lakh one mile from Lakh station on the Dhond-Manmad Railway. It is a very small canal twenty-three miles long and irrigates only about six hundred acres. The flow in the river is extremely variable and dwindles to almost nothing in the cold weather. As it has no storage reservoir, nor suitable cross drainage works, it has not proved successful financially. As soon as an assured supply is available in the Pravara Left Bank Canal, the Lakh Canal will be abandoned and the area commanded by it will be irrigated by the new Pravara Left Bank Canal.

Besides the works mentioned above, there are in the district three storage tanks which are, however, dependent on local rains for their supply. They are :—

Bhatodi Tank.—The tank is on the Mehekari river about twelve miles from Ahmednagar. It is a small tank having a useful capacity of nearly ninety-three million cubic feet. Generally an area of about eight hundred acres is irrigated. The length of main canal and distributaries together is about ten miles. The tank is entirely at the mercy of the rainfall.

Khuntephal Tank.—The tank is situated near Shevgaon and was only completed in 1922 at a cost of about four lakhs of rupees. It is expected to irrigate about five hundred acres with the full number of waterings.

Visapur Tank.—The tank is situated near Visapur in the Shrigonda taluka. Its construction is still in progress. The estimated length of main canal is about eleven miles with eight distributaries forty-one miles in length in all. The full capacity is 1,136 million cubic feet. The tank is expected to irrigate an area of 13,143 acres.

Besides the irrigation works noted above, wells are also used for irrigating lands throughout the district. Except in the *Dangs*, the wells are very evenly distributed though nowhere very numerous. Tanks are few in the district and are mostly confined to the Akola taluka. In a year of very deficient rainfall the protection from the various sources of irrigation is considerably reduced.

DRINKING WATER

The difficulty regarding drinking water has grown more acute during the past decade owing to the fall in the general water level. The drinking water supply generally depends upon the sufficiency or otherwise of the rainfall. Some of the worst affected parts in the district usually, are Karjat taluka, Jamkhed Mahal, the southern part of Pathardi Peta, the hilly tracts of Parner and Rahuri talukas, the Dangi villages in Akola and the table-land in Sangamner, particularly the southern part. In the vicinity of canals or rivers, the condition is, of course, better.

INDUSTRIES AND TRADE

There are various industries such as carpentry, smith's work, etc., carried on by various missions in Ahmednagar town and such other places in the district but their capacity for absorbing casual famine labour is very limited. The important towns in the district are Ahmednagar, Sangamner, Bhingar Pathardi, Rahuri, Vambori and Belapur.

At Ahmednagar, Shevgaon and Pathardi there are a few cotton Ginning and Pressing factories but they do not work regularly every year and when they work they work for a few months. In Sangamner, Bhingar and Pathardi the Weaving Industry thrives well but this industry is confined to the communities of *Salis*, *Kostis* and *Momins*. At Rahuri there are a good many orange gardens and a number of people get labour in them. Vambori and Belapur are centres of grain trade, but they afford little or no relief in times of scarcity.

One sugar factory under the name of the Belapur Syndicate has been established and provides labour to a number of people in the surrounding villages of Rahuri, Kopargaon and Newasa talukas.

The Pravara Left and Right Bank Canals will give relief in Sangamner, Rahuri and Kopargaon talukas to a large number of people in times of scarcity.

The district is purely agricultural and there is in fact no purely industrial town which has any appreciable effect on the need for relief.

Trade is carried on almost entirely by means of daily and weekly markets. From all parts of the district oilseeds and gram are exported to Poona and Bombay. The imports consist chiefly of English piece-goods, tin sheets, metals, groceries, silk yarn, and silk.

COMMUNICATIONS

The great famine of 1876-77 was the occasion of the construction of the Dhond and Manmad chord line. It was built as a relief work and stands as the best protection against acute distress due to failure of food supply and great rise in prices. It joins the Calcutta and Madras railways and runs through the centre of the Ahmednagar district making all portions of the district readily accessible which do not already possess easier access to the main lines. Parts of Karjat and Akola are nearer the main lines and connected with them by good metalled roads. In road communication the district is well supplied. The old trunk roads are joined to the railway by feeders. There are over five hundred miles of metalled roads in the district.

RELIGION

The total population of the district according to the census of 1921 is 731,552. Of these Hindus number 670,215, Musalmans 37,736 and Christians 23,402. The number of Parsis is very small, only 181, while 18 persons have been recorded as belonging to various other denominations.

LANGUAGES

By language the population may be thus distributed : Marathi 89, Hindi (Hindusthani) 5½, Bhil 1¾, and Rajasthani (Marwadi) 2¼ per cent. This is the

only district in which the number of Marwadi settlers is large enough to give their language a substantive position among the local vernaculars.

BROAD OCCUPATIONS

According to broad occupations, 492,029 persons or 67·3 per cent. are supported by Agriculture; 78,169 persons or 10·7 per cent. by Industry including mines; 55,874 persons or 7·6 per cent. by Trade and Transport, 10,321 persons or 1·4 per cent. by Professions and the Liberal Arts while the remainder 95,159 persons or 13·0 per cent. by miscellaneous other occupations.

DETAILED OCCUPATIONS

The following is a detailed analysis of the various occupations followed by the people and in a few cases according to castes. The figures relate to the census of 1921 and represent both workers and dependents.

Pasture and Agriculture.—Of the total population of 504,537 supported by pasture and agriculture 367,874 are ordinary cultivators, 106,113 are farm servants and field-labourers while 17,563 persons are dependent on income from rent of agricultural land. Cattle and buffaloe breeders and keepers number 1,633, while herdsmen, shepherds and goat-herds number 8,394. As the district is very liable to famine many of the above are often hard-pressed, except in tracts having irrigation or grazing facilities.

Industry.—Under this head may be mentioned the textile workers, such as weavers and other workers in cotton, wool, silk, etc., at home and in factories, who number 19,328. Carpenters and joiners 5,876, basket makers and workers in cane, bamboos, etc., 1,005 mainly constitute the wood industry. Under metal workers, workers in iron number 3,211, while those in brass, copper, etc., number 2,597. There are 4,154 potters in the district. In the food industry grain-parchers 430, sweetmeat makers 724 and butchers 1,317 deserve a mention. The building industry is mainly composed of 2,614 stone cutters and dressers and 2,484 brick-layers and masons. The other workers who fall under this head are the tailors 3,454, shoe-makers 4,227, washermen 2,892 and barbers 4,919. It may be generally remarked that almost all the workers noted above get sufficient employment on decent wages and their condition is hence generally fair.

Trade.—The trade in foodstuffs (excluding hotels) ranks first under this head and includes mainly the grocers and sellers of oil, salt, condiments and spices, etc., 11,087, sellers of milk, butter, fish, poultry, etc., 1,388, grain and pulse dealers 2,877 and dealers in hay, grass and fodder 474. Trade in fuel such as firewood, cowdung cake, etc., is also comparatively important in the district and supports 2,406 persons. The trade in piece-goods and textiles affords the means of livelihood to 3,588 persons. Traders as a class may be counted as generally secure.

Professional Beggars.—These number 9,679. In times of famine they generally go elsewhere but some may still need help in famine.

Depressed Classes.—Among these the Chambhars or shoe makers 11,572 earn generally fair wages, while some of the Bhangis or scavengers 624 are employed in municipal towns. With these exceptions the condition of the depressed classes, in which Mahars and Dheds 39,278 and Mangs 13,316 are included, is generally unsatisfactory. Some, but especially Mahars required to perform village service, are likely to require State aid in times of distress.

Brahmans 20,664 who are mostly writers, Government servants, land holders, money-lenders, priests, etc., are quite secure.

Musalmans 37,736.—They follow various occupations such as weavers, betel-leaf sellers, butchers, etc. They are generally fairly off.

Parsis 181 are contractors, traders, etc., and are quite well off.

Christians 23,402.—The large number of Christians is due to the existence of missionary institutions in the district. They follow various occupations and many of them are artisans and manufacturers. Their condition, on the whole, is fair.

ECONOMIC CONDITION

The economic condition of the people has undergone little change in the last two decades except that the agriculturists in Rahuri and Kopargaon talukas derive much benefit from the sugarcane plantation due to the Pravara Left and Right Bank Canals and the two Godavari Canals.

Harigaon (Kopargaon), where the Belapur company has opened a sugar factory, is becoming an industrial town or rather a big agricultural concern, where many labourers are permanently engaged.

Migration.—The tendency of the people to migrate in search of labour in years of scarcity has become increasingly conspicuous and a succession of famine years has taught the people, especially the agricultural classes, the value of migration at the proper time in search of labour and the advantage of disposing of their surplus cattle at the first signs of a bad season. They chiefly go either to the adjoining talukas, where conditions are better, which is generally the case in the irrigated tracts of the district, or to Bombay, Poona, Baramati, Khandesh and the Berars and of late to Thokarwadi and Lonavla.

FORMER FAMINES

In **1876** of a total of 6·70 inches of rain at Karjat, 6·15 inches fell in June. The rain of that year which was so deficient as to cause famine exceeded the average in June in four talukas (Parner, Karjat, Nevasa and Rahuri) where *rabi* cultivation then preponderated and was, therefore, nearly useless.

In **1896** at Ahmednagar 14·58 and at Parner 21·12 inches of rain fell in June and July. For the next five months the fall was 3·73 and 4·91 inches respectively. The monsoon ceased early in September and with practically no rain in October a more or less complete failure of *kharif* crops was brought about, while *rabi* sowings could not be undertaken except where irrigation was possible. In the Dangs the loss of the *kharif* crops, on which these tracts depend, was very great and was caused by abnormally heavy rain in July and August. Next year 1897 the rainfall in the hills was sufficient, but elsewhere in the district there was no useful rain till September and famine works had to be continued throughout the 1897 monsoon.

In **1899** the rains opened well, but a long drought in July and August, especially in the east ruined the *kharif* crops, the outturn of which was estimated below ten per cent. of the normal. September rain enabled *rabi* sowings to be made but drought in October and November brought these to naught, and the *rabi* outturn was nil. The shortness of water in wells restricted the irrigated crops.

In **1900,** the rainfall was very variable and the crops throughout were in a precarious condition but were saved from absolute ruin from time to time by casual showers. The *kharif* outturn ranged from forty to fifty per cent. of the normal for the district but was very unequally distributed. The *rabi* varied from nil to twenty-five per cent. Consequently famine continued.

In **1901** prospects were at first good but the rainfall was deficient from September onwards and the *rabi* crops were seriously affected. The damage done by shortage of rain was intensified by a plague of locusts and grass hoppers.

In **1905** the total rainfall was only about half the average. Both the *kharif* and *rabi* rains were deficient and the outturn of these crops consequently came to less than fifty per cent. of the normal.

In **1911** the *kharif* rains were very meagre in the district except in the west while the *rabi* rains were equally poor throughout. As may be expected the crops gave but an insignificant outturn and distress was acute in many parts.

In **1918,** except the heavy ante-monsoon showers which were practically useless, there was no adequate rain till September. This rain (of September) improved slightly what little *kharif* was sown and encouraged undertaking of *rabi* sowings but the deficiency of rains in October and the major portion of November told seriously on the *rabi* crops. Some rain occurred at the end of November and in early December but by that time the crops had gone beyond any hope of recovery in a good many places. The season was thus a disastrous one. The distress was further accentuated by War conditions and restrictions on import of grain by Railway. A number of relief works had to be opened in the district. Grant of liberal suspensions and remissions, *tagai* advances, dole to decrepits and village servants, opening of cheap grain shops, facilities for importing grain were some of the other measures adopted to alleviate the situation.

In **1920,** the deficient rains in June and July and a protracted drought in August and the first half of September resulted in almost a complete failure of the *kharif* crops. Rain in the second half of September induced *rabi* sowings in many places but the subsequent failure of rains marred the *rabi* prospects almost entirely. As a result famine conditions acute enough to necessitate opening of relief works prevailed in the district. *Tagavi* advances and grants of remissions and suspensions had also to be given on an extensive scale.

In the famines of 1918-19 and 1920-21 dry grass was indented for from the Forest Department and grass depôts were opened at suitable places where the grass was sold at cheap rates to the needy. In 1920-21, much *kadbi* (*jowar* fodder) was purchased from agriculturists at harvest time, stored and sold at very moderate rates to the agriculturists when the demand for fodder became very acute.

In the famines of 1918-19 and 1920-21, Cactus fodder was used on a large scale and cactus depôts opened in many places.

FORECAST OF RELIEF WORKERS

In 1876-77 the number of persons on relief works hardly exceeded thirty thousand. In 1897 this number exceeded one lakh while in the famine of 1899-1900 it reached the maximum on record—nearly 270,000 persons, due to very

heavy immigration from the Nizam's Territory. In 1900-01 and 1901-02 the stream was the other way and large numbers migrated to Nizam's Territory, Berar and other places where the season was more favourable. During the last two decades the highest number of persons on relief works was recorded in 1918-19. As people have now learnt to migrate at the right time and as also owing to the development of canal and other industrial areas, a better field for obtaining work is now available to them, the number of persons requiring relief would hardly exceed 30,000 in a year of acute distress in future.

AHMEDNAGAR.

Cultivated and Uncultivated Area, 1922-23.

Irrigation Abstract, 1922-23.

No.	Taluka.	Number and area of villages: Government: No.	Government: Area in square miles.	Alienated: No.	Alienated: Area in square miles.	Total: No.	Total: Area in square miles.	Population (1921): Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available: Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated: Cropped (Net): Irrigated.	Area cultivated: Cropped (Net): Net area sown.	Area cultivated: Fallow.	Area cultivated: Total.	Area uncultivated: Available for cultivation.	Area uncultivated: Not available for cultivation: Forest.	Area uncultivated: Not available for cultivation: Other.	Area uncultivated: Total.	Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		No.	Area in square miles.	No.	Area in square miles.	No.	Area in square miles.	Total.	Density per square mile.	Rs.	Villages.	Area in acres.	Percentage of previous column on the gross area.	Irrigated.	Net area sown.	Fallow.	Total.	Available for cultivation.	Forest.	Other.	Total.	Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
												Acs.		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ahmednagar	104	527	17	116	121	643	114,823	180	1,93,859	121	493,071	99·9	12,154	238,245	65,720	316,120	4,539	40,339	47,105	91,983	635	..	..	10,949	..	11,584	8,098	..	..	..	5,891	1,000	43	1,581	..	59	1,579	..	1,391	15,650	2,066	11,584
2	Parner	104	590	15	143	117	729	62,454	92	1,54,431	117	468,960	99·5	5,942	302,746	53,618	362,312	1,559	63,499	61,623	126,680	..	..	329	5,458	..	5,787	3,018	1,084	..	..	1,784	461	249	911	..	14	1,085	..	573	6,294	1,506	5,787
3	Shrigonda	79	570	7	43	86	613	47,080	76	1,56,410	86	395,752	99·8	9,321	227,382	60,671	297,374	3,313	63,107	51,963	98,383	..	..	..	9,256	..	9,256	3,139	1,569	28	6,147	1,182	147	462	34	598	21	586	10,724	1,518	9,256
4	Karjat	72	473	10	93	82	566	26,907	47	82,237	82	365,528	99·8	6,328	178,978	74,222	253,528	3,338	49,027	51,635	103,950	..	..	..	6,528	..	6,528	34	1,227	25	3,945	246	77	874	13	518	..	445	7,202	1,574	6,328
5	Jamkhed P.	47	274	12	77	59	351	25,148	123	70,038	59	265,703	99·4	3,896	130,886	33,902	164,995	2,912	28,276	15,669	47,857	..	..	..	3,899	..	3,899	..	..	..	..	2,511	20	177	..	..	..	1,268	5,064	1,165	3,899
6	Shevgaon	124	336	29	117	150	473	41,166	87	1,97,785	150	293,334	99·8	2,529	202,407	56,318	251,254	2,408	12,649	19,023	34,080	..	..	..	2,593	..	2,593	..	964	..	..	992	..	..	15	662	..	202	39	18	2,972	379	2,593
7	Pathardi P.	62	338	8	53	70	391	32,372	83	1,19,165	70	253,511	99·2	3,442	138,532	46,010	184,995	2,308	26,284	22,637	51,229	2,513	..	..	2,566	..	5,079	1,286	..	..	..	548	1,566	119	231	360	152	3,720	590	5,229	1,846	5,079
8	Newasa	114	443	28	142	140	585	51,228	87	2,18,207	140	375,454	99·6	5,163	268,148	54,307	327,618	5,806	14,831	27,139	47,836	20,706	..	..	6,541	..	27,247	4,506	5,015	..	..	12,323	4,812	73	2,038	756	2,103	609	729	28,461	1,214	27,247
9	Rahuri	112	451	4	9	116	493	65,243	134	2,19,001	116	312,639	99·1	27,608	158,522	47,899	229,029	3,357	47,358	32,893	83,608	1,835	316	..	3,260	..	38,576	25,212	7,525	..	..	1,489	4,385	278	4,345	8,081	4,771	..	1,687	52,357	1,831	50,526
10	Kopargaon	132	512	3	7	135	519	1,03,635	194	2,58,400	125	332,171	99·3	39,893	219,715	31,301	290,909	3,049	8,678	29,535	41,262	6,423	..	..	5,608	..	12,031	3,141	4,371	..	..	2,998	4,476	128	2,125	407	1,137	8	969	16,222	4,191	12,031
11	Sangamner	148	649	8	46	156	695	71,830	108	1,75,725	152	447,419	99·4	13,089	224,655	52,814	290,526	8,027	86,895	56,063	152,985	..	630	..	401	..	1,131	116	593	..	..	..	..	..	299	611	182	..	102	1,237	123	1,131
12	Akola	157	561	4	17	161	578	69,089	118	1,22,305	157	371,311	99·6	17,599	227,125	77,595	322,319	2,089	10,914	31,133	44,136	..	..	..	3,421	..	3,421	1,027	650	..	..	..	..	..	30	1,784	..	..	1,814	..	3,421
	Total	1,237	5,782	133	828	1,373	6,610	731,552	110	19,68,274	1,375	4,208,425	99·2	130,173	2,423,564	625,164	3,183,901	44,339	531,775	448,412	1,024,526	65,593	959	..	60,380	..	126,932	46,139	23	55	39,564	19,415	1,069	13,840	10,012	13,169	1,047	7,523	145,233	18,301	126,932

Cultivated and Uncultivated Area, 1918-19.

Irrigation Abstract, 1918-19.

No.	Taluka.	Number and area of villages: Government: No.	Government: Area in square miles.	Alienated: No.	Alienated: Area in square miles.	Total: No.	Total: Area in square miles.	Population (1911): Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available: Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated: Cropped (Net): Irrigated.	Area cultivated: Cropped (Net): Net area sown.	Area cultivated: Fallow.	Area cultivated: Total.	Area uncultivated: Available for cultivation.	Area uncultivated: Not available for cultivation: Forest.	Area uncultivated: Not available for cultivation: Other.	Area uncultivated: Total.	Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		No.	Area in square miles.	No.	Area in square miles.	No.	Area in square miles.	Total.	Density per square mile.	Rs.	Villages.	Area in acres.	Percentage of previous column on the gross area.	Irrigated.	Net area sown.	Fallow.	Total.	Available for cultivation.	Forest.	Other.	Total.	Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
												Acs.		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ahmednagar	103	526	18	118	121	638	129,109	202	1,93,010	121	408,074	99·9	16,623	127,824	170,024	316,521	2,545	40,518	46,490	91,553	1,685	..	..	14,497	..	16,198	13	..	..	..	1,078	1,144	102	1,869	..	..	1,695	19,409	2,482	16,193
2	Parner	104	590	15	143	119	733	82,342	113	1,54,369	117	469,046	99·5	12,711	211,292	118,613	342,616	1,622	63,391	61,417	126,430	176	..	..	11,131	..	11,307	..	..	..	..	3,530	3,000	..	1,029	..	..	786	13,301	2,394	11,307
3	Shrigonda	78	572	8	48	86	620	65,722	106	1,54,329	86	395,756	99·8	13,632	99,520	183,237	296,389	3,449	44,122	51,795	99,367	..	..	..	13,113	..	13,113	56	1,678	161	2,245	515	1,313	535	363	1,259	..	1,292	14,419	1,306	13,113
4	Karjat	72	478	10	93	82	571	82,244	144	82,237	82	365,588	99·8	9,633	170,169	74,222	253,824	3,338	49,027	51,894	104,259	..	..	..	9,523	..	9,523	34	1,227	25	3,945	246	77	874	13	518	11	445	7,417	1,574	9,523
5	Jamkhed P.	46	293	13	61	59	351	57,313	169	68,829	59	265,791	99·4	5,902	112,324	38,648	157,074	4,653	28,319	15,746	48,717	..	209	..	6,164	..	6,369	18	510	158	3,905	247	..	158	534	170	1,186	..	947	7,047	678	6,369
6	Shevgaon	124	336	29	117	150	473	75,526	159	1,97,686	155	295,316	99·8	10,730	124,066	126,803	260,809	2,777	12,776	18,776	34,477	..	..	..	10,052	..	10,052	12	2,125	12	1,740	475	1,920	4,113	100	599	..	484	11,581	1,549	10,032
7	Pathardi P.	62	338	8	53	70	391	64,139	174	1,19,296	70	235,915	99·2	6,361	135,258	42,427	184,096	2,646	26,521	22,252	51,419	..	..	..	6,826	51	9,998	8	..	..	425	320	947	7,920	206	1,275	..	534	8,681	2,855	5,826
8	Newasa	114	443	26	140	140	583	84,464	145	1,71,195	140	375,429	99·6	11,441	183,109	135,266	329,816	5,823	15,784	26,184	47,791	229	..	..	16,164	..	16,393	1,315	3,648	..	..	3,998	2,994	2,114	211	137	9,627	..	665	25,090	1,253	16,393
9	Rahuri	112	483	4	9	116	492	78,316	156	1,76,765	116	312,638	99·1	21,715	205,253	133,955	228,521	3,521	47,867	32,923	84,311	5,092	..	..	15,480	..	20,572	4	4,161	..	..	8,135	3,205	2,257	1,306	442	1,238	464	951	22,161	1,649	20,512
10	Kopargaon	122	512	3	7	125	519	91,490	176	2,60,976	125	332,166	99·3	45,229	42,632	205,327	293,233	673	8,889	29,511	39,933	34,524	73	..	8,399	..	42,996	143	21,707	..	..	2,695	4,125	5,218	4,637	6,106	1,389	..	1,084	44,404	1,908	42,996
11	Sangamner	144	640	8	46	152	686	95,457	139	1,75,597	152	447,423	99·4	16,331	224,655	88,121	290,812	7,964	86,969	57,578	152,611	3,720	170	..	10,560	..	14,390	..	7,758	..	..	2,277	2,401	1,898	2,244	684	1,452	..	903	17,488	3,098	14,390
12	Akola	153	563	4	17	157	580	75,949	130	1,22,887	157	371,289	98	1,392	145,068	80,721	227,181	2,137	110,904	31,357	144,398	89	..	..	945	..	1,025	2	497	..	..	..	..	68	146	..	251	..	..	1,152	127	1,025
	Total	1,234	5,794	141	834	1,375	6,628	945,905	142	18,59,180	1,375	4,208,451	99·2	173,320	1,566,035	1,448,269	3,187,624	39,321	535,405	446,101	1,020,827	45,240	715	..	115,724	..	161,679	478	46,025	590	45,864	16,467	15,717	23,886	8,840	15,286	425	10,016	183,690	21,960	161,679

Crops, 1922-23.

No.	Taluka.	Cereals: Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Barley.	Other.	Total.	Pulses: Tur.	Gram.	Mug and Udid.	Math and Kulith.	Other.	Total.	Orchard and Garden Produce: Vegetables.	Gress Fodder.	Fruit trees.	Total.	Drugs and Narcotics: Tobacco.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds: Sesame.	Linseed.	Castor-seed.	Groundnut.	Safflower-seed.	Niger-seed.	Other.	Total.	Fibres: Cotton.	Other.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder cropped.	Net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ahmednagar	151,870	49,890	9	5,969	..	43	15	1,333	209,129	2,762	8,398	1,049	2,133	..	14,342	17,217	3,456	572	374	4,402	246	347	692	59	369	797	5	553	17,227	29	18,971	4,000	121	4,221	787	256,196	6,012	250,184
2	Parner	111,646	105,692	327	8,538	..	249	151	418	266,721	9,478	1,866	1,990	9,899	16	23,249	7,263	161	226	7,650	48	10	373	14	565	229	13	364	33,936	53	24,205	182	240	547	30	321,991	19,533	307,458
3	Shrigonda	169,159	21,160	33	1,497	..	147	25	699	192,523	6,298	1,298	1,017	7,169	3	15,785	2,049	70	161	2,280	102	10	112	17	514	1,457	15	1,950	9,500	26	13,080	2,221	640	2,911	13	236,899	13,344	223,555
4	Karjat	95,396	27,104	268	2,101	..	84	151	1,062	125,902	2,263	3,052	2,469	11,978	..	19,763	659	16	161	704	124	11	135	327	13	1,265	1,596	28	218	17,078	24	20,193	21,075	1,158	22,233	3,261	192,525	7,073	185,452
5	Jamkhed P.	65,864	30,201	208	5,320	..	28	53	2,932	102,614	2,753	2,995	1,373	5,681	9,598	115	18,065	1,001	37	19,103	1,064	10	1,074	9	1,098	1,468	15	890	5,473	953	9,906	17,304	2,315	19,619	1,947	145,171	8,192	137,074
6	Shevgaon	53,422	64,005	3	4,792	..	15	..	2,209	114,447	2,810	2,874	424	4,467	2	10,577	1,959	37	104	2,102	78	7	79	131	9	3,194	3,506	21	38	7,170	34	13,964	58,785	1,391	70,176	1,295	212,780	4,553	208,227
7	Pathardi P.	20,456	66,915	759	4,676	..	2	422	1,334	94,564	1,253	1,679	1,482	4,946	123	9,483	2,675	73	144	2,892	14	1,703	241	17	3,115	819	13	340	1,544	265	5,786	37,634	698	38,262	1,983	98,780	1,829	96,951
8	Newasa	102,914	73,736	1	14,246	..	16	..	2,329	193,242	1,721	9,489	707	2,159	..	14,076	2,098	84	139	2,321	84	1,708	2,190	560	2,058	3,028	12	861	21,698	3	27,810	43,933	1,408	45,341	3,974	277,713	4,942	272,771
9	Rahuri	111,917	43,750	4	8,149	..	73	..	995	164,279	456	7,789	1,187	3,765	1	13,198	10,741	1,152	726	11,893	2,991	30	31	257	257	989	490	3	682	11,439	..	13,298	5,850	538	6,388	401	196,596	11,224	185,372
10	Kopargaon	79,968	102,281	352	5,870	..	7	334	1,323	224,767	743	14,754	2,640	2,086	13	20,236	19,602	1,320	2,675	23,597	1,530	114	1,644	170	8,085	3,265	648	33	9,272	..	10	22,223	4,795	27,018	10	10,221	4,795	5,426	5,334	5,426
11	Sangamner	88,599	164,675	185	10,465	99	128	..	438	264,960	48	4,544	4,908	1,092	95	10,687	8,339	1,070	267	10,167	143	53	196	392	407	2,003	67	..	340	2,807	10	5,227	1,910	1,595	3,505	177	295,718	57,097	238,621
12	Akola	87,298	61,649	14,994	4,543	24,009	108	..	20,881	127,978	1,401	4,903	3,736	5,581	841	14,833	2,381	50	341	2,465	532	..	212	..	46	..	..	..	261	286	10,424	..	10,993	11	405	414	109	137,057	8,087	149,570
	Total	1,039,237	893,064	15,869	107,652	24,167	1,245	247	35,580	2,081,061	26,579	64,109	27,368	65,946	825	184,827	78,084	9,173	2,728	44,947	1,794	464	2,258	4,120	10,072	19,026	14,111	1,546	6,393	134,933	11,577	13,186	207,197	197,049	10,128	207,197	13,051	2,233,720	159,884	2,573,836

Crops, 1918-19.

No.	Taluka.	Cereals: Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Barley.	Other.	Total.	Pulses: Tur.	Gram.	Mug and Udid.	Math and Kulith.	Other.	Total.	Orchard and Garden Produce: Vegetables.	Gress Fodder.	Fruit trees.	Total.	Drugs and Narcotics: Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds: Sesame.	Linseed.	Castor-seed.	Groundnut.	Safflower-seed.	Niger-seed.	Other.	Total.	Fibres: Cotton.	Other.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped.	Remainder cropped.	Net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ahmednagar	102,340	19,028	20	1,663	..	1,078	125	322	122,576	759	1,560	332	1,452	..	4,104	612	2,498	657	4,319	56	471	527	831	103	107	211	24	330	15,248	..	16,953	2,496	4	2,500	936	131	1,067	265	147,589	23,203	124,386
2	Parner	116,351	68,645	25	2,033	..	..	..	2,300	189,386	6,383	1,048	..	..	..	13,761	5,514	1,404	..	6,918	39	..	39	811	433	162	145	..	193	9,209	28	5,823	15,560	237	565	802	214	228,025	5,605	222,418
3	Shrigonda	74,875	11,948	67	1,699	..	1,313	161	389	91,302	1,733	1,163	580	5,452	..	8,929	1,495	510	176	2,182	25	50	75	1,039	355	252	279	53	1,544	9,711	..	11,944	267	220	487	11	115,214	2,162	113,052
4	Karjat	102,136	5,739	214	741	..	742	307	662	110,272	891	2,144	523	1,750	..	5,308	657	110	..	772	55	16	71	615	157	455	206	52	1,088	7,450	486	10,009	15,915	1,193	877	2,070	587	132,926	2,729	130,197
5	Jamkhed P.	89,621	16,155	126	2,581	..	158	254	507	109,380	541	4,198	..	427	1,814	65	7,048	1,267	122	1,365	1,503	87	39	123	534	170	165	2,210	33	172	1,025	140	..	1,165	12,747	551	383	934	664	133,165	1,800	131,365
6	Shevgaon	81,838	29,912	15	1,972	..	1,920	12	851	116,442	716	1,077	131	4,486	5	6,369	1,226	780	181	2,187	32	3	37	947	102	635	225	29	991	6,391	50	8,443	5,330	187	5,517	139	140,679	2,779	137,900
7	Pathardi P.	78,761	42,824	173	939	..	947	4	156	123,821	608	1,606	384	5,471	..	8,069	2,578	555	49	2,982	34	18	52	480	209	672	83	39	863	2,578	183	4,623	7,121	125	7,246	1	145,685	4,046	141,639
8	Newasa	132,503	29,748	1	5,494	..	2,114	..	611	167,951	1,064	6,369	631	1,168	..	9,232	1,572	884	148	2,604	1,572	85	1,657	881	633	1,133	413	103	3,260	17,967	1,936	25,445	43,167	1,940	45,107	1,971	215,530	4,045	211,485
9	Rahuri	49,864	21,764	4	5,343	..	2,257	..	169	83,401	944	1,690	688	890	4	3,285	1,473	1,310	639	3,418	27	..	27	693	442	652	124	72	1,327	3,176	..	2	4,108	2,115	142	2,257	951	98,392	3,557	95,040
10	Kopargaon	14,523	27,363	143	21,922	..	65	..	101	67,571	844	4,966	836	1,019	..	6,703	2,573	2,233	149	5,031	27	..	27	955	105	239	45	21	334	851	..	1,510	555	417	972	1,868	90,645	2,062	87,678
11	Sangamner	80,240	172,752	207	7,638	65	1,898	..	182	185,190	1,095	4,954	1,913	3,954	1,953	13,769	1,979	1,078	1,979	4,036	1,979	77	2,056	773	764	453	1,309	179	1,199	1,763	216	..	3,178	8,911	1,714	1,464	14	206,956	5,966	200,990
12	Akola	7,502	64,532	4,778	594	23,028	180	..	14,532	125,250	129	207	3,741	5,187	417	9,681	3,055	367	79	3,503	105	..	105	177	583	55	6	..	103	21	7,655	..	7,841	..	290	290	2	142,436	1,008	146,430
	Total	910,857	493,875	15,861	52,599	23,094	15,825	943	20,787	1,493,879	11,542	27,243	10,819	39,233	2,459	91,296	27,571	12,548	3,897	42,016	590	653	1,243	7,710	3,351	5,139	4,312	310	2,027	86,695	8,342	5,849	112,634	24,953	4,196	29,149	4,742	1,792,020	39,538	1,752,482

Agricultural Stock, 1915-46.

Agricultural Stock, 1918-20.

No.	Taluka.	Cattle: For Ploughs.: Oxen.	For Ploughs.: He-buffaloes.	For Breeding.: Bulls.	For Breeding.: Bull-buffaloes.	For other purposes.: Oxen.	For other purposes.: He-buffaloes.	Milch Cattle.: Cows.	Milch Cattle.: She-buffaloes.	Young Stock.: Calves.	Young Stock.: Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs.: Small.	Ploughs.: Large i. e. of over 2 Cattle.	Carts.: For passengers.	Carts.: For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Ahmednagar	26,595	11	30	15	498	108	17,957	2,474	15,925	1,165	64,715	1,873	11,382	40,706	1,424	2,848	1,006	1,675	19·8
2	Parner	31,926	21	32	59	373	96	23,050	2,982	19,853	2,076	80,416	1,573	39,185	56,657	2,380	3,025	950	1,546	19·3
3	Shrigonda	25,704	14	34	64	443	94	17,723	1,315	13,441	849	63,596	1,457	7,651	26,492	598	1,943	651	940	19·7
4	Karjat	17,940	174	41	37	122	78	13,720	1,426	13,668	994	48,144	1,023	21,777	30,399	525	1,049	389	831	19·6
5	Jamkhed P.	18,306	99	43	31	241	96	12,923	1,764	12,511	2,183	69,458	1,340	7,667	24,844	..	1,403	728	1,402	14·0
6	Shevgaon	20,077	25	46	13	372	52	7,454	1,294	10,286	1,094	40,671	1,612	15,199	35,544	451	1,825	1,315	1,477	23·9
7	Pathardi	19,268	16	40	14	750	20	10,506	2,343	15,203	1,732	45,197	1,283	11,785	30,270	1,012	2,100	363	1,362	17·3
8	Newasa	22,407	31	58	39	916	137	12,774	1,031	17,602	2,606	78,117	1,749	39,723	..	..	3,572	1,587	1,973	25·3
9	Rahuri	20,483	44	60	25	516	41	14,279	961	13,417	628	50,402	1,571	24,328	33,938	1,085	3,331	1,281	1,668	20·0
10	Kopargaon	26,284	34	70	14	980	149	15,141	1,089	19,745	2,146	73,788	1,629	29,523	754	4,962	2,129	5,400	2,004	18·9
11	Sangamner	31,832	89	62	17	443	23	21,579	2,273	15,283	1,443	72,943	1,873	67,194	32,772	3,189	4,783	1,070	2,555	16·3
12	Akola	19,784	4,586	51	33	559	26	22,466	4,518	14,965	2,718	69,508	791	6,415	12,916	6,080	2,577	107	2,107	13·3
	Total	280,750	5,152	591	236	5,111	575	185,492	25,577	171,121	17,002	692,597	18,376	256,885	362,941	17,033	33,668	11,301	21,434	18·9

| No. | Taluka. | Cattle: For Ploughs.: Oxen. | For Ploughs.: Bulls. |

AHMEDNAGAR TABLES—II.

Water Supply—1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kachha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Ahmednagar ..	1	..	..	1	..	..	579	3,827	4,406	991	102	1	2	8	..	..	..
2	Parner ..	..	..	..	32	..	..	633	3,326	3,959	675	93	..	1	2	..	..	..
3	Shrigonda ..	..	..	..	..	..	..	253	1,855	2,108	506	34	1	..	2	..	..	..
4	Karjat ..	..	..	..	..	..	..	459	1,594	2,053	396	13	..	..	2	..	1	9
5	Jamkhed P. ..	..	..	..	..	..	..	426	1,455	1,881	431	52	..	2	4	..	..	..
6	Shevgaon ..	..	..	..	..	..	..	159	2,382	2,541	718	26	1	..	..	..	..	..
7	Pathardi P. ..	..	..	..	..	..	..	181	2,311	2,492	642	12	..	..	..	..	..	..
8	Nevasa ..	3	..	..	..	..	..	230	2,358	2,588	447	187	..	..	8	..	..	1
9	Rahuri ..	3	..	..	..	..	..	115	3,165	3,280	597	106	11	..	..	..	..	..
10	Kopargaon ..	3	..	..	..	..	..	317	2,807	3,124	555	36	..	..	..	..	..	..
11	Sangamner ..	3	..	..	5	..	..	633	5,026	5,659	1,501	22	1	2	4	..	..	..
12	Akola ..	..	..	..	..	..	..	280	817	1,097	503	47	75	1	1	..	2	..
	Total ..	6	..	..	38	..	..	4,265	30,973	35,238	7,967	730	91	7	38	1	11	7

Government Protective Irrigation Works—1922-23.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Area irrigated in 1922-23. Rabi.	Area irrigated in 1922-23. Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Bhatodi Tank ..	15,126	13,657	12,124	12,124	269	486	755
2	Lakh Canal ..	29,913	25,536	22,760	11,280	367	327	694
3	Pravara Right Bank Canal	73,763	58,415	16,960	16,960	9,226	8,835	18,061
4	Pravara Left Bank Canal	125,044	99,025	28,760	28,760	18,588	13,335	31,923
5	Godavari Right Bank Canal ..	144,310*	136,390*	49,331*	49,331*	11,047	15,067	26,114
6	Godavari Left Bank Canal	88,080*	83,000*	30,109*	30,109*	5,758	7,889	13,647
		* Inclusive of area in Nasik—						
	Total ..	476,236	416,023	160,044	148,564	45,255	45,939	91,194

Holdings—1921-22.

No.	Taluka.	Number of Holdings. Under 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of Holding.	Average. Assessment per Holding.	Average. Assessment per Acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. as. p.	Rs. as. p.
1	Ahmednagar ..	6,613	2,821	234	3	..	13,152	256,257	172,195	0 12 8	0 11 2
2	Parner ..	7,314	2,918	169	6	..	15,537	253,955	141,601	0 5 11	0 5 10
3	Shrigonda ..	4,930	3,110	620	79	..	10,947	252,342	147,274	0 9 4	0 9 4
4	Karjat ..	3,278	2,367	246	6	..	7,674	198,352	70,390	0 5 8	0 5 8
5	Jamkhed P. ..	4,366	1,330	122	..	..	8,540	120,770	57,929	0 7 2	0 7 2
6	Shevgaon ..	4,271	1,872	207	8	..	7,768	186,381	165,376	0 14 2	0 14 2
7	Pathardi P. ..	5,131	1,600	103	1	..	9,526	157,288	111,098	0 11 4	0 11 4
8	Nevasa ..	1,678	2,489	265	5	..	9,725	229,594	187,159	0 13 3	0 13 3
9	Rahuri ..	6,951	2,233	171	6	..	12,776	210,308	210,816	1 0 0	1 0 0
10	Kopargaon ..	7,075	3,149	226	6	..	14,183	264,483	246,510	0 14 11	0 14 11
11	Sangamner ..	10,022	2,712	108	..	..	19,365	252,436	164,250	0 10 5	0 10 5
12	Akola ..	8,396	2,292	80	2	..	16,882	206,418	118,242	0 9 2	0 9 2
	Total ..	75,038	29,087	2,533	120	..	145,475	2,754,550	19 15 5	0 13 1		

Incidence of Assessment—1920-21.

No.	Taluka.	Fully Assessed Area. Area.	Fully Assessed Area. Assessment.	Fully Assessed Area. Incidence per Acre.	Fully Assessed Area including Alienated Land in Government Villages. Population.	Fully Assessed Area including Alienated Land in Government Villages. Incidence per Head of population including Alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Ahmednagar ..	256,257	172,195	0 12 8	101,405	1 11 2
2	Parner ..	253,955	141,601	0 5 11	57,183	2 7 10
3	Shrigonda ..	252,342	147,274	0 9 4	44,082	3 5 5
4	Karjat ..	198,352	70,390	0 5 8	20,824	3 6 9
5	Jamkhed P. ..	120,770	57,929	0 7 2	35,951	1 9 9
6	Shevgaon ..	186,381	165,376	0 14 2	31,935	5 2 10
7	Pathardi P. ..	157,288	111,098	0 11 4	30,081	3 11 8
8	Nevasa ..	229,594	187,159	0 13 3	39,258	4 12 5
9	Rahuri ..	210,308	210,816	1 0 0	60,202	3 7 3
10	Kopargaon ..	264,483	246,510	0 14 11	99,350	2 7 6
11	Sangamner ..	252,436	164,250	0 10 5	69,039	2 6 2
12	Akola ..	206,418	118,242	0 9 2	66,335	1 12 6
	Total ..	2,558,088	1,793,250	1 6 11	660,653	2 11 5

Government Protective Irrigation Works—1918-19.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Area irrigated in 1918-19. Rabi.	Area irrigated in 1918-19. Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Bhatodi Tank ..	15,126	13,657	12,124	12,124	431	909	1,340
2	Lakh Canal ..	29,913	25,536	22,760	11,280	559	404	963
3	Pravara Right Bank Canal	73,763	60,000	45,000	24,656	5,270	1,814	7,084
4	Pravara Left Bank Canal	23,724	21,155	20,088	14,763	2,119	116	2,235
5	Godavari Right Bank Canal.	144,310	136,390	49,331	49,331	7,665	17,006	24,671
6	Godavari Left Bank Canal	88,080	83,000	30,109	30,109	3,684	8,446	12,130
	Total ..	374,916	339,738	179,412	142,263	19,728	28,695	48,423

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1	Ahmednagar ..	Maximum 1916 ..	..	..	..	0·27	1·99	6·42	10·65	2·11	1·83	7·59	1·32	..	47·25
		Minimum 1876 ..	..	..	..	..	..	2·24	2·30	1·28	1·52	0·99	0·26	..	8·99
		Average ..	0·17	0·13	0·10	0·23	0·92	4·52	3·61	1·77	6·84	2·78	0·83	0·55	23·90
		Rainfall for 1922-23 ..	0·17	..	1·29	..	..	5·42	1·16	0·26	1·83	0·44	8·56	..	19·13
2	Parner ..	Maximum 1916 ..	..	..	..	0·12	1·28	3·82	15·66	1·64	12·44	6·06	0·90	..	42·22
		Minimum 1876 ..	..	..	..	..	..	2·18	1·88	1·02	0·17	..	0·18	..	6·46
		Average ..	0·20	0·09	0·10	0·26	1·16	4·65	3·67	2·76	6·22	2·88	0·81	0·30	23·10
		Rainfall for 1922-23 ..	..	0·32	0·81	0·43	0·25	4·61	1·61	0·76	0·75	2·25	8·80	..	21·09
3	Shrigonda ..	Maximum 1916 ..	..	..	0·36	..	3·73	1·81	9·60	2·24	8·38	6·85	0·58	..	33·49
		Minimum 1909 ..	..	..	..	0·48	1·38	2·62	0·43	0·34	0·04	0·34	..	..	10·47
		Average ..	0·15	0·05	0·07	0·24	0·97	3·56	2·39	2·04	5·72	2·76	0·95	0·45	19·33
		Rainfall for 1922-23 ..	0·23	..	0·47	..	..	4·46	0·58	0·25	0·77	1·17	9·91	..	17·84
4	Karjat ..	Maximum 1881 ..	..	..	..	..	2·40	12·30	1·25	7·97	10·10	3·96	0·30	..	38·28
		Minimum 1876 ..	..	..	..	..	..	0·15	..	..	0·09	..	..	..	0·55
		Average ..	0·11	0·09	0·11	0·28	0·89	4·06	2·63	2·83	6·19	2·35	0·81	0·53	20·88
		Rainfall for 1922-23 ..	1·54	0·24	0·92	0·51	..	5·49	1·84	0·09	2·11	0·33	11·85	..	24·90
5	Mirajgaon D. ..	Maximum 1916 ..	..	..	0·26	..	3·19	2·72	10·78	2·35	11·63	4·45	1·53	..	36·81
		Minimum 1920 ..	1·82	..	..	0·18	..	2·75	0·69	1·46	0·67	0·94	..	..	6·51
		Average ..	0·20	0·09	0·11	0·28	1·11	4·94	3·64	2·56	5·72	1·94	0·90	0·09	21·38
		Rainfall for 1922-23 ..	0·50	0·10	0·73	..	..	4·83	1·23	0·68	1·19	1·00	10·69	..	22·01
6	Jamkhed P. ..	Maximum 1883 ..	..	..	..	..	..	10·05	2·77	14·81	2·87	8·71	0·43	..	44·66
		Minimum 1876 ..	..	..	..	..	0·15	2·89	1·67	3·22	0·84	0·04	..	..	8·81
		Average ..	0·22	0·16	0·18	0·37	0·88	4·92	4·35	3·74	7·28	2·04	0·88	0·44	25·46
		Rainfall for 1922-23 ..	0·44	..	0·45	0·4	0·40	4·27	2·14	0·49	2·39	0·40	9·33	..	20·78
7	Shevgaon ..	Maximum 1910 ..	..	..	..	0·71	8·62	7·36	3·25	18·97	3·68	2·81	..	..	45·40
		Minimum 1918 ..	0·04	..	..	2·45	0·37	0·47	1·35	3·31	..	0·21	1·11	..	9·31
		Average ..	0·19	0·14	0·14	0·22	0·70	4·79	2·05	0·46	2·47	0·89	0·43	..	25·35
		Rainfall for 1922-23 ..	..	..	0·86	0·15	0·17	3·55	2·39	0·62	..	2·33	6·10	..	15·80
8	Pathardi P. ..	Maximum 1916 ..	..	..	..	0·07	..	0·93	1·76	12·81	2·69	15·83	4·99	2·41	41·49
		Minimum 1920 ..	2·21	..	..	..	..	0·32	1·23	0·27	1·22	5·10	..	..	11·35
		Average ..	0·45	0·29	0·27	0·27	0·36	3·92	3·92	3·46	6·95	2·63	0·71	0·83	26·50
		Rainfall for 1922-23 ..	0·17	..	0·82	..	..	12·62	4·37	0·22	..	6·43	1·55	8·92	35·10
9	Nevasa ..	Maximum 1883 ..	..	..	..	..	2·48	9·20	2·80	7·37	13·38	5·66	0·32	..	41·15
		Minimum 1905 ..	..	0·03	..	..	0·01	2·81	2·35	0·83	3·37	0·42	0·18	..	10·00
		Average ..	0·22	0·08	0·15	0·11	0·72	4·86	3·84	3·08	6·39	2·33	0·61	0·41	22·80
		Rainfall for 1922-23 ..	..	..	2·19	0·13	..	6·50	2·34	1·25	3·89	0·72	8·24	..	25·26
10	Rahuri ..	Maximum 1886 ..	..	..	..	1·30	6·68	4·57	4·74	3·34	13·76	0·28	2·81	..	37·28
		Minimum 1905 ..	..	..	..	0·02	1·08	2·16	0·44	0·78	1·59	0·30	..	..	8·37
		Average ..	0·18	0·12	0·08	0·28	0·85	4·72	3·43	1·95	5·30	1·95	0·61	0·21	19·68
		Rainfall for 1922-23 ..	..	..	1·29	..	0·36	3·91	1·87	0·62	2·21	0·27	7·69	..	18·22
11	Kopargaon ..	Maximum 1916 ..	..	..	..	..	4·36	3·16	11·79	4·30	8·37	5·60	1·41	..	40·96
		Minimum 1899 ..	..	..	..	0·28	4·34	0·20	0·59	1·70	..	..	..	0·07	7·19
		Average ..	0·17	0·08	0·03	0·09	0·71	0·04	3·46	2·41	5·18	1·85	0·86	0·25	19·13
		Rainfall for 1922-23 ..	..	..	1·12	0·10	0·38	4·01	3·12	1·08	3·91	1·42	4·02	..	18·24
12	Sangamner ..	Maximum 1916 ..	..	..	..	..	3·39	4·31	7·22	6·78	7·26	0·45	..	..	38·88
		Minimum 1920 ..	0·74	..	..	..	..	0·17	0·59	0·50	1·39	..	..	..	6·30
		Average ..	0·19	0·05	0·03	0·21	0·76	3·79	3·55	2·06	5·15	2·44	0·68	0·20	19·11
		Rainfall for 1922-23 ..	..	..	1·29	0·34	..	5·97	0·81	0·60	2·10	1·16	3·51	..	13·13
13	Akola ..	Maximum 1910 ..	..	..	..	..	0·08	8·19	5·94	4·97	11·13	4·41	0·84	..	36·56
		Minimum 1876 ..	..	..	..	..	..	2·48	5·07	1·42	0·01	..	..	..	8·98
		Average ..	0·09	0·03	0·04	0·28	0·91	4·59	5·70	3·05	7·32	2·12	0·59	0·15	21·91
		Rainfall for 1922-23 ..	..	0·04	1·26	0·23	..	4·02	4·74	2·49	1·67	1·00	2·78	..	17·63

Temperature Details (Ahmednagar).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		F.	F.	F.	F.	F.	F.	F.	F.	F.	F.	F.	F.
1913 ..	Mean maximum ..	85	90	96	103	101	89	84	84	88	90	87	84
	,, minimum ..	51	59	60	71	71	69	65	67	64	57	54	54
	Absolute maximum ..	89	97	102	107	107	106	89	90	90	89	88	88
	,, minimum ..	46	51	53	60	63	66	66	66	61	55	50	44
1914 ..	Mean maximum ..	84	89	94	99	103	91	83	84	86	90	85	84
	,, minimum ..	53	56	61	67	73	69	67	67	68	68	59	54
	Absolute maximum ..	92	95	101	106	108	102	89	89	90	92	90	88
	,, minimum ..	47	50	52	62	66	68	68	63	63	51	50	41
1915 ..	Mean maximum ..	83	88	93	99	102	96	85	84	85	85	85	81
	,, minimum ..	54	55	63	69	72	72	70	68	67	66	62	51
	Absolute maximum ..	86	93	100	104	107	106	92	89	89	87	89	85
	,, minimum ..	47	45	55	63	68	68	64	64	63	55	54	44
1916 ..	Mean maximum ..	83	87	97	100	102	88	86	84	85	85	83	..
	,, minimum ..	53	54	63	70	73	71	70	69	68	67	62	51
	Absolute maximum ..	87	94	102	103	109	95	95	91	93	88	86	..
	,, minimum ..	46	47	55	62	67	65	67	65	63	60	52	44
1917 ..	Mean maximum ..	83	86	93	97	96	91	88	85	83	82	82	81
	,, minimum ..	53	56	61	65	68	70	70	69	68	66	56	51
	Absolute maximum ..	86	92	96	100	99	97	93	87	88	87	86	84
	,, minimum ..	46	47	53	59	61	68	64	64	63	58	47	46
1918 ..	Mean maximum ..	81	88	94	100	97	92	89	86	88	93	88	84
	,, minimum ..	52	52	62	67	71	69	69	67	66	62	56	56
	Absolute maximum ..	86	96	99	105	104	98	94	91	94	96	93	88
	,, minimum ..	43	51	52	57	67	65	65	64	61	58	52	46
1919 ..	Mean maximum ..	85	91	96	100	103	91	86	87	88	86	82	..
	,, minimum ..	55	57	64	67	72	72	70	70	68	65	63	53
	Absolute maximum ..	89	95	101	104	110	102	94	90	92	92	94	86
	,, minimum ..	46	43	53	58	65	68	67	68	64	57	56	47
1920 ..	Mean maximum ..	83	89	97	100	101	93	86	88	89	93	89	88
	,, minimum ..	58	55	61	69	70	71	71	67	68	67	66	52
	Absolute maximum ..	89	96	101	105	105	110	95	92	94	98	92	91
	,, minimum ..	50	46	49	59	65	68	69	63	65	58	50	45
1921 ..	Mean maximum ..	88	90	100	103	105	92	86	86	88	85	84	..
	,, minimum ..	54	55	63	71	71	70	70	68	66	64	52	..
	Absolute maximum ..	92	97	104	108	109	104	94	92	94	92	88	..
	,, minimum ..	44	47	54	65	64	65	67	63	61	52	49	..
1922 ..	Mean maximum ..	83	89	96	100	101	91	84	85	86	90	80	81
	,, minimum ..	56	59	63	71	73	71	70	69	68	65	61	60
	Absolute maximum ..	89	96	102	105	108	99	91	94	94	91	89	84
	,, minimum ..	48	45	50	60	67	68	68	66	63	56	56	50

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Price in lbs. per Rupee. Bajri.	Price in lbs. per Rupee. Rice.	Price in lbs. per Rupee. Tuvar.	Price in lbs. per Rupee. Jowari Straw.	Price in lbs. per Rupee. Dry grass.	Wages per diem per man. Skilled Labour.	Wages per diem per man. Ordinary Labour.	Wages per diem per man. Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Ahmednagar ..	30	27	14	17	78	..	0 11 8	0 5 6	0 4 0
	Non-headquarter towns.									
2	Parner ..	31	28	13	19	98	..	0 12 6	0 6 3	0 4 8
3	Shrigonda ..	33	27	13	16	116	..	0 11 6	0 5 3	0 3 9
4	Karjat ..	31	29	14	16	107	171	0 11 8	0 5 11	0 3 8
5	Jamkhed P. ..	33	31	14	17	98	0	0 11 7	0 5 7	0 3 8
6	Shevgaon ..	34	29	13	16	23	..	0 12 10	0 6 4	0 4 3
7	Pathardi P. ..	35	30	12	12	189	..	0 10 0	0 5 0	0 3 8
8	Nevasa ..	36	30	13	15	85	..	0 8 0	0 4 0	0 3 0
9	Rahuri ..	33	29	14	17	24	..	0 12 8	0 6 4	0 4 0
10	Kopargaon ..	31	27	13	15	52	..	0 13 5	0 6 11	0 4 3
11	Sangamner ..	23	29	15	17	37	520	0 10 4	0 5 3	0 3 5
12	Akola ..	30	27	15	14	191	1580	0 8 ..	.. ..	.. ..
	Average of the non-headquarter towns .	32	29	14	16	100	120	0 [redacted]		

Prices—1922-23.

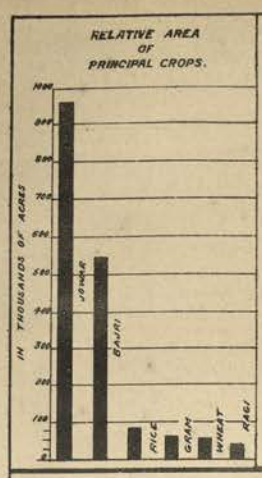
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Price in lbs. per Rupee. Bajri.	Price in lbs. per Rupee. Rice.	Price in lbs. per Rupee. Tuvar.	Price in lbs. per Rupee. Jowari Straw.	Price in lbs. per Rupee. Dry grass.	Wages per diem per man. Skilled Labour.	Wages per diem per man. Ordinary Labour.	Wages per diem per man. Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Ahmednagar ..	19	15	10	11	41	..	1 5 8	0 10 0	0 8 4
	Non-headquarter towns.									
2	Parner ..	18	14	9	10	44	..	1 0 0	0 6 0	0 5 0
3	Shrigonda ..	20	16	9	9	51	..	0 12 8	0 6 6	0 5 0
4	Karjat ..	20	16	9	9	107	..	1 0 0	0 6 0	0 5 0
5	Jamkhed P. ..	20	16	9	9	142	..	0 12 0	0 6 0	0 5 0
6	Shevgaon ..	18	15	8	9	96	..	1 0 0	0 6 0	0 4 0
7	Pathardi P. ..	17	15	10	10	50	..	1 0 0	0 8 0	0 6 0
8	Nevasa ..	20	17	9	9	77	..	1 0 0	0 8 0	0 6 0
9	Rahuri ..	20	17	10	10	21	..	1 0 0	0 7 0	0 5 0
10	Kopargaon ..	20	15	10	10	28	25	1 0 0	0 8 0	0 6 0
11	Sangamner ..	23	20	10	10	24	..	0 14 8	0 8 5	0 5 0
12	Akola ..	20	17	10	10	25	..	1 0 0	0 8 0	0 5 0
	Average for the period ..	19	16	9	9	67	25	0 15 3	0 6 3	0 4 0

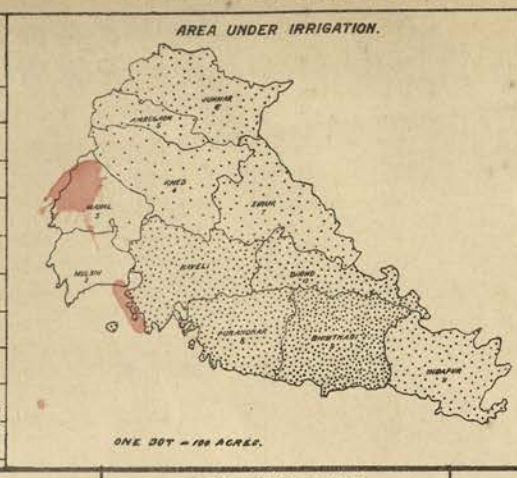
Famine Relief—Average Daily Number 1911-12, 1918-19 and 1920-21.

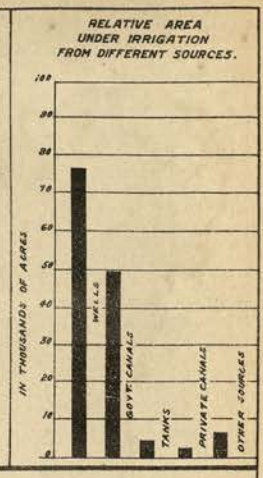
Month.	1911-12. Relief workers.	1911-12. Dependents.	1911-12. Gratuitously relieved.	1911-12. Total.	1911-12. Price in lbs. per Rupee. Jowari.	1911-12. Price in lbs. per Rupee. Bajri.	1918-19. Relief workers.	1918-19. Dependents.	1918-19. Gratuitously relieved.	1918-19. Total.	1918-19. Price in lbs. per Rupee. Jowari.	1918-19. Price in lbs. per Rupee. Bajri.	1920-21. Relief workers.	1920-21. Dependents.	1920-21. Gratuitously relieved.	1920-21. Total.	1920-21. Price in lbs. per Rupee. Jowari.	1920-21. Price in lbs. per Rupee. Bajri.
	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
November ..	..	..	..	..	..	..	..	..	..	..	..	..	4,271	717	1,156	6,144	11,432	11
December ..	..	..	..	..	..	..	..	..	..	..	..	..	5,385	1,913	12,018	19,316	10	11
January ..	..	..	..	..	..	..	2,727	881	5,813	9,421	8	8	5,521	2,818	15,833	24,272	10	11
February ..	..	..	..	..	..	..	12,230	5,282	8,016	25,528	8	7	4,851	2,279	19,021	26,151	12	13
March ..	..	..	..	..	..	..	17,999	8,058	11,139	36,256	9	7	6,253	3,155	21,345	30,691	13	13
April ..	No	Relief	Works	were	opened.		21,260	9,006	13,650	43,996	9	8	10,490	4,557	22,027	37,074	10	9
May ..	..	..	..	..	..	..	16,879	6,096	15,714	40,689	9	8	14,203	5,834	22,858	43,215	10	9
June ..	..	..	..	..	..	..	14,621	7,347	16,321	38,289	9	8	21,496	4,671	24,721	53,091	9	8
July ..	..	..	..	..	..	..	16,290	8,526	12,281	37,097	8	7	18,065	7,119	21,568	46,752	9	8
August ..	..	..	..	..	..	..	10,742	6,649	10,931	29,422	9	8	18,694	1,945	11,791	32,428	10	9
September ..	..	..	..	..	..	..	3,866	2,356	6,773	12,995	9	9	..	..	..	..	..	..
October ..	..	..	..	..	..	..	2,742	1,358	2,027	6,127	10	9	..	..	..	..	..	..
Average for the period ..							12,041	5,765	9,419	27,225	9	8	9,793	3,522	17,752	31,067	10	10

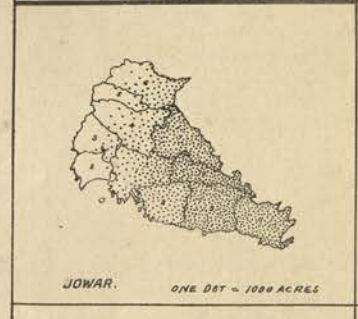
POONA DISTRICT

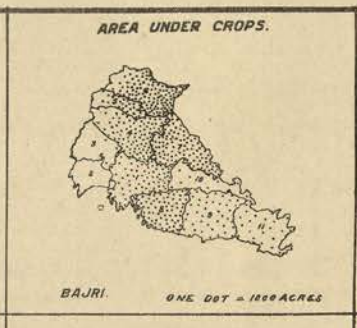
POONA DISTRICT.

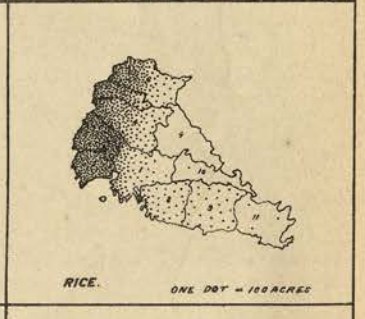


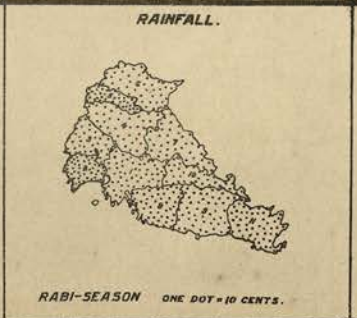


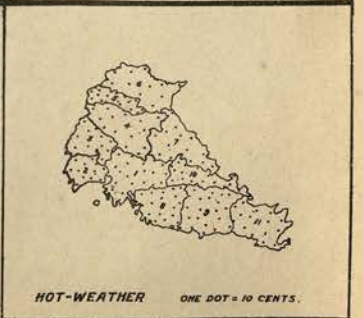












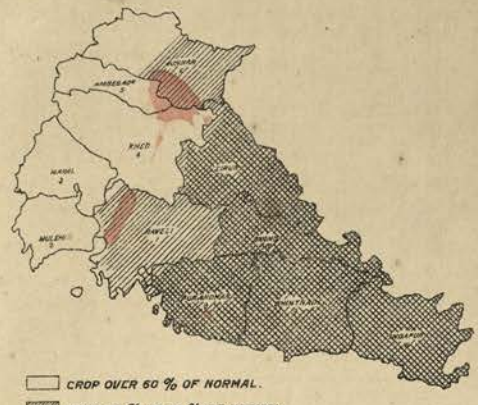
POONA DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

NOT LIABLE TO FAMINE.
LESS LIABLE TO FAMINE BUT WITH FREQUENT SCARCITY.
VERY LIABLE TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.



CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1918-19.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1920-21.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

NUMBER OF CATTLE.

1909-10

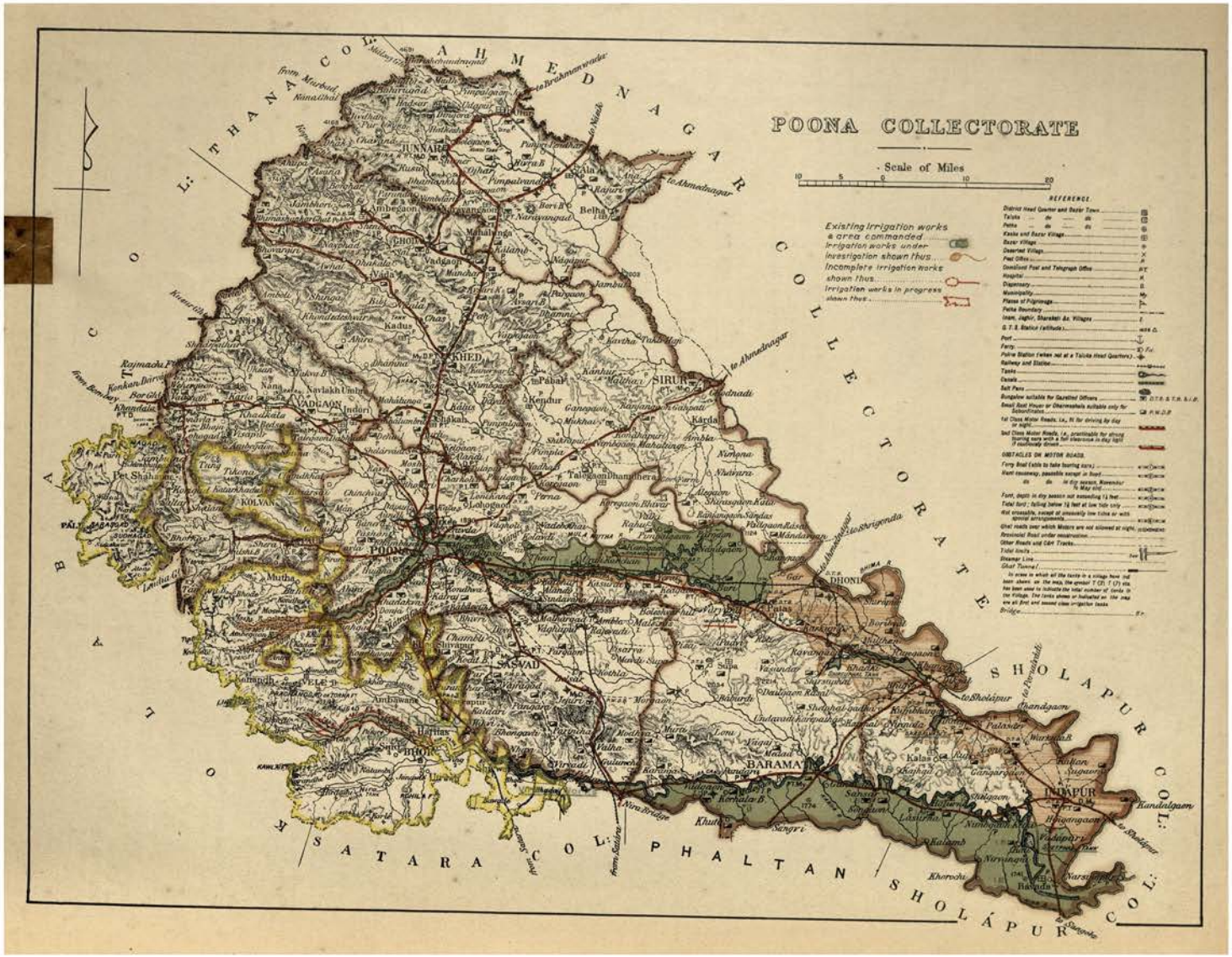
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


POONA COLLECTORATE
Scale of Miles
10 5 0 10 20
Existing Irrigation works & area commanded
Irrigation works under investigation shown thus
Incomplete irrigation works shown thus
Irrigation works in progress shown thus
REFERENCE
AHMEDNAGAR COLLECTORATE
THANA COL:
SHOLAPUR COL:
SATARA COL:
PHALTAN
SHOLÁPUR COL:
KOLABA COL:
JUNNAR
CHOR
KHED
SIRUR
VADGAON
KOLVAN
POONA
SASVAD
BHOR
BARAMATI
DHONI
INDÁPUR
to Ahmednagar
to Shrigonda
to Sholápur
to Sangole
from Satara
from Satara
from Bombay
from Murbad
to Brahmanwada
to Nasik
to Ahmednagar
to Sholápur
to Pandhari
to Sangole

POONA

POSITION AND AREA

The district of Poona lies between 17° 54′ and 19° 24′ north latitude and 73° 19′ and 75° 10′ east longitude, and covers an area of 5,357 square miles. It is bounded on the north by the district of Ahmednagar, on the east by Ahmednagar and Sholapur, on the south by the Nira river separating it from Satara and the estate of the Chief of Phaltan, and on the west by Kolaba. Two isolated blocks of the Bhor State, one in the west and the other in the south, are included within the limits of the district.

PHYSICAL FEATURES

Towards the west the country is undulating and intersected by numerous spurs of the Western Ghats which break off in a south-easterly direction becoming lower as they pass eastwards and in the end sinking to the general level of the plain. On the extreme western border the land is so rugged and cut up by valleys and ravines that on the slopes and sides of the hills a system of spade tillage takes the place of ordinary cultivation by ploughs and bullocks. Along the western border of the district the Western Ghats form a barrier inaccessible except by a few difficult passes or *ghats*. Many streams rise in the Western Ghats and flow eastwards until they join the Bhima river which passes through the district from north-west to south-east. The main tributaries are, on the left, the Vel and Ghod and on the right the Bhama, Indrayni, Mula and Nira. The water of the rivers is good for all purposes and all of them are sources of supply to the many villages along their banks.

The shape and position of the Poona district cause a gradual change from a climate as moist as that below Ghats to one where the rainfall is as precarious and as scanty as in any part of the Presidency. The Western frontier is the crest of the Sahyadris, the eastern-most taluka lies wedged between the driest talukas of Sholapur. Like all other districts which abut on the Western Ghats Poona may be divided into a rugged hilly western belt with an excessively heavy rainfall and an eastern portion of level plain with good soil but badly supplied with water and dependent on a capricious rainfall derived chiefly from the late or north-east monsoon, the eastern and western tracts being separated by a Transition belt where the rainfall is regular and seasonable, the soil good, the water supply plentiful and the facilities for the regular rotation of crops greatest. The Western belt is here called the Mawal, a term corresponding to the *Dangs* or *Dongri* in the other Deccan districts and to the *Mallad* of the Bombay Karnatak. There is no distinctive term for the transition tract. The plain country may be, as elsewhere, called the Desh.

RAINFALL

The regular monsoon breaks ordinarily in early June in the Mawal and gradually extends over the district. It closes in September and is succeeded by the north-east rains which give the moisture for the late crops of the eastern districts. The north-east rains close in November. In occasional years there are heavy showers in the east in December and even later on but these are abnormal and harmful. As already stated, the rainfall varies considerably in different parts of the district. In the western parts of the Junnar, Khed, Haveli and Mawal talukas it is heavy and regular; in the Central belt it is moderate and in the Bhimthadi and Indapur talukas on the east it is very irregular. At Lonavla in the Ghats it averages over 165 inches annually. In Poona city nearly thirty inches is the annual average while farther east it does not exceed twenty inches in places.

CLIMATE

The climate of the district varies with the distance from the Western Ghats. Near the Ghats it is very moist and feverish in the rains but pleasant throughout the hot season. The temperature is kept down by a cool sea-breeze which extends to Poona itself. In the east the climate is healthy but hot. In the Transition tract in which Poona city is situated the elevation above sea-level and the prevalence of the westerly breezes make the climate dry and invigorating. The air is lighter, the cold more bracing and the heat less oppressive than in most parts of Western or Southern India.

In the general famine map the areas have been divided according to their liability to famine and have been marked by lines. To simplify this division and to make it correspond, as far as possible, with the boundaries of talukas it may be fairly correctly stated that the Desh includes the talukas of Indapur, Sirur, Bhimthadi, half of Purandhar and Khed and one-quarter each of Junnar and Haveli. The Mawals similarly comprise of the Mawal taluka, half of Khed and one-fourth each of Haveli and Junnar. The Transition belt thus roughly includes half of the Junnar, Khed, Haveli and Purandhar talukas. The area of the Desh is slightly more than one-half of the district, being 2,793 square miles. The Mawals comprise an area of 1,177 square miles which is roughly eighty-five per cent. of the area covered by the Transition tract which occupies 1,380 square miles.

SOIL

The soil of the district is lighter in the west than in the east. It belongs to three classes, black (*kali*), red (*tambdi*), and coarse grey (*barad*). In some places, each class of soil blends with the other in varying proportions and in turn is modified by sand, gravel, lime-salts and other ingredients.

The *Kali* soil belongs mostly to the plain east and covers large areas near rivers and streams. In such places it is of great and uniform depth. Excellent black soil of small and varying depth with its surface covered with black basalt stones is found on table lands. Black soils are richer than either red or coarse grey soils and are commonly found in layers several feet deep. The sun does not harden their surface but cracks and crumbles it and as they retain moisture longer than other soils they are the favourite land for late (*rabi*) crops. The reddish or copper coloured soils are always shallower and coarse than the black. When watered by frequent showers they are generally well suited for early (*kharif*) crops. They are commoner in the west than in the east. The red soil is generally rough and stiff and requires deep ploughing. Higher up the slopes or covering the tops of the lower uplands of the eastern plain is the coarse grey (*barad*). It varies in colour from a light reddish brown to grey, is of a coarse gravelly or loose friable texture and is greatly wanting in cohesion. It does not yield wheat, peas or any late or cold weather crops but in seasons of heavy rainfall spiked millet and the early pulse give a good return.

CROPS

The Mawals grow rice and inferior hill-millets with wheat, peas, lentils, and gram as second crops after rice when the moisture is sufficient as it generally is, in low-lands. Wheat is grown as a substantive dry crop in a considerable area of the Mawal. The variety is a soft white. It is inferior but is almost the only soft white grown in the Presidency out of Sind. *Khursani* (niger seed) is the oil-seed of the Mawals. Sugarcane is grown with little or no irrigation but to a small extent.

The Desh grows rich crops of late *jowar* with rows of safflower, some wheat chiefly under irrigation and of the spelt variety and a little cotton. *Bajri* is taken on light lands whenever the early rains suffice. Half the sugarcane of the district is grown in Bhimthadi where its cultivation has been greatly developed within late years on the Nira canal.

The Transition tract, as might be expected, grows a great variety of products. Its cereal is *bajri* and the chief oil-seeds are niger-seed and ground-nut. Wheat (dry) is a large crop. Sugarcane is extensively grown, mostly in Haveli but chiefly under canal and channel irrigation. Potatoes are largely planted in Khed and Junnar. Other vegetables form an important market garden crop near Poona but scarcely more important than fruits such as figs, papayas, guavas and oranges. The market gardens of Khed and Junnar irrigated principally from channels taken from perennial streams, though distant from Poona, are very valuable and extensive. The produce is chiefly taken *via* Talegaon to Bombay where it finds a ready market. The Poona market gardens also send a steady supply of green vegetables to Bombay. Cotton is confined to the Indapur taluka.

In a normal year the district has about eight to ten lakhs of acres under *jowar*, five lakhs under *bajri*, a lakh under rice and half of that under wheat and gram each. Safflower is by far the most extensively grown oil-seed and occupies a lakh of acres. Cotton and sugarcane occupy nearly ten thousand acres each, though the area under the former often fluctuates greatly.

CATTLE

The district has ten breeds of cattle of which the *Khilari* or herd-cattle from West Khandesh are the most valuable drought animals in the Deccan. Buffaloes are common in all parts and are of several kinds but the best breeds are imported from Sind, Cutch and Gujarat. For rice field work the Poona cultivator prefers the buffalo to the bullock. The cows supply most of the milk used in the district. Poona has long been famous for its horses and there are few villages in east Poona without one or two brood mares. Donkeys are used

as load-carriers by stone-cutters, lime-burners, potters and washermen. Flocks of sheep are found in most large villages and goats are common. The total number of cattle which amounted to over six lakhs at the cattle census of 1915 decreased to only four and a half lakhs in 1919-20 apparently owing to the severe famine of 1918-19. Sheep and goats also decreased from four lakhs in 1915-16 to only two and a half lakhs in 1919-20. Of the total cattle, nearly two-fifths are plough cattle, one-third milch-cattle and about one-fourth is young stock. In milch-cattle cows number four times the buffaloes.

FORESTS

The Forests occupy an area of 572 square miles in the district. They are poor and scattered for the most part. Those to the west of the district are mainly useful from a climatic point of view. The yield is mostly small timber for local consumption and fire-wood and charcoal. Grazing areas are valuable in the vicinity of Poona and are sold on ' cutting ' terms.

IRRIGATION

The area commanded by irrigation is naturally in a position of comparative security. The Nira Canal with the Shetphal Tank and the Mutha Canal including the Matoba Tank are by far the most extensive irrigation works benefiting the district. The Nira Left Bank Canal is one of the oldest and so far the largest irrigation work in the Deccan. It was completed in 1898-99 at a cost of about sixty-six lakhs of rupees. This canal takes off from a weir at Vir which is fed by Lake Whiting, a reservoir constructed on the Yelavandi river at Bhatgar, some thirty-two miles south of Poona. The masonry dam is 127 feet high and about three thousand feet long and the storage capacity of the lake is about 5,300 million cubic feet. A dam 190 feet high is being constructed just below the existing one in order to provide a combined supply to the Nira Left Bank Canal and the Nira Right Bank Canal which is under construction. The new dam will increase the storage capacity of the lake to about 24,000 million cubic feet.

The Shetphal Tank is a comparatively small work constructed near the tail of the Nira Left Bank Canal from which it receives its supply during the monsoon for irrigating lands under its command.

During the year 1922-23, this system irrigated about seventy-five thousand acres.

Mention may be made here of a form of a long term water leases that is peculiar to this irrigation system and is being extended to other canals—the so-called ' perennial block ' system. It consists of a six-year agreement between the Irrigation Department and the lessee, under which the former guarantees the supply of water for the irrigation of sugarcane on one-third of the area concerned and for other crops on the remaining area during the monsoon and *rabi* seasons and the lessee binds himself to pay a fixed sum per acre in that area, whether water is taken or not. There are at present about sixteen thousand acres under " perennial block " agreements on the Nira canal. The guarantee and generally the monopoly of water for the more valuable crops is the attraction of the agreement and the advantage to the department is the stability of irrigation during the important seasons of *rabi* and hot weather and also a fixed revenue that can be depended upon.

The irrigation scheme comprising the Mutha Canals and Matoba Tank was completed in 1896-97, the capital cost being about sixty-five lakhs of rupees. There are two canals the Right and Left Bank Mutha Canals, of which the former is seventy miles and the latter eighteen miles long. Both the canals take off from Lake Fife a storage reservoir of a capacity of about 4,000 million cubic feet formed by a masonry dam about 3,400 feet long and 107 feet high, on the Mutha river at Khadakvasla, about ten miles south-west of Poona. The Mutha canals play a very important part in the welfare of the city of Poona and the surrounding country. They supply the cantonment and the city with their supply of water and have, besides irrigating ordinary crops, greatly promoted the cultivation of fruits, vegetables, fodder and sugarcane within easy reach of a large city and an important military centre. The cultivation includes about 1,700 acres under fruits and vegetables and about two thousand acres under fodder crops.

This system irrigated about twenty-six thousand acres during the year 1922-23. The Matoba Tank, a small irrigation work, receives its main supply from the Mutha Right Bank Canal and is therefore incorporated in the system.

The other irrigation works in the district are of comparatively very minor importance. They are the Kasurdi, Shirsuphal and Bhadalvadi Tanks. The two former are situated in the Baramati taluka and the last in the Indapur taluka. During the year 1922-23 the Kasurdi Tank irrigated about a hundred acres while the Shirsuphal and Bhadalvadi Tanks irrigated nearly thirteen hundred and fifteen hundred acres respectively.

The Kasurdi Tank is a small tank dependent for its supply on local rainfall. The tank has an earthen dam twelve hundred feet long and thirty-three feet high. The total capacity was fourteen and a half million cubic feet. Owing to silt deposits, however, the capacity is now reduced to nine million cubic feet.

The Shirsuphal Tank has an earthen dam 2,430 feet long and fifty-four feet high. The total capacity was 367 million cubic feet, but the contents available above silt level are 357 million cubic feet.

The Bhadalvadi Tank is formed by an earthen dam 2,610 feet long with a maximum height of fifty-five feet. The tank when full has an area of 336 acres and had an available contents above the level of the outlet of 223 million cubic feet, when constructed. Owing to deposits of silt the capacity has now been reduced to 190 million cubic feet.

DRINKING WATER

The drinking water supply of the district is only satisfactory in the west. The arid and transition tracts are as dry as ever. There the villages standing on the banks of the rivers and villages having irrigation are generally good for the supply of drinking water; but otherwise the water-supply is generally sufficient only till the end of February and in the hot season it runs short and is supplemented by digging *Zaras* in *Nalas*, by constructing new wells and by deepening the old ones. A water-supply grant is provided in the budget each year for this purpose.

INDUSTRIES

Poona district is an important centre, especially of textile work, the number of textile workers being 22,624. A large trade is done in the weaving of silk *saris* and *fabrics* and in gold thread work. The Poona cotton and silk embroidered *pagris* (turbans) have a wide spread reputation and the brass and silver work of the same place is much admired. There is a cotton and silk weaving mill in Poona city as well as a very large number of hand-looms. At Talegaon there is a pioneer glass factory which is doing fairly well and a paper mill at Mundhwa. The carpet factory at Kune near Khandala, the Hanman sugar and oil factory at Fursangi in Haveli taluka, the Ravivarma Fine Art Litho Press at Malavli near Karla and the sugar-factory recently established near Baramati are the other industrial concerns in the district.

TRADE

The trade of the district is, generally speaking, small. The chief exports are grain, *gur*, cotton cloth, vegetables, fruits, brass-ware and silk-cloth. The chief imports are rice, wheat, salt and copper and brass sheets.

COMMUNICATIONS

The G. I. P. Railway is the main trade route. It passes through the centre of the tract most liable to famine. The Southern Maratha Railway opened in 1886 brings the Bhimthadi and Purandhar talukas, localities before isolated by a spur of the Sahyadris, within ready access of Poona and the G. I. P. Railway. Railway communication with the northern and eastern districts of the Presidency and beyond, is further facilitated by the Dhond and Manmad Railway which joins the G. I. P. at Dhond in the Bhimthadi taluka. The construction of Dhond-Baramati Railway in 1916 has facilitated the import of food and fodder into Bhimthadi taluka in times of famine or scarcity. Railway feeders are numerous. The Sirur taluka is intersected by the Poona-Nagar and the Sirur-Kedgaon roads. Junnar and Khed have a ready access to the railway by the Narayangaon-Talegaon road which has raised Talegaon to a trade centre of some importance. This road is bridged at Indori, Khed and Kalamb. There is further considerable traffic with the country below Ghats, both parallel with the railway over the Bhor Ghat and by pack bullocks over the Malsej and Nava Ghats. The communications of the Junnar and Khed Mawals are less full but at the same time from a famine point of view less important. The Otur-Brahmanwada road, which was constructed during the famine of 1918-19, joins the Junnar taluka with the Akola taluka of the Ahmednagar district and greatly facilitates the traffic between these two.

Motor services throughout the district afford a quick means of transport on all metalled roads leading from Poona.

RELIGION AND LANGUAGE

The total population of the district is 1,009,033. Of these Hindus number 941,090; Musalmans 46,517; Christians 17,737 and Parsis 3,067. The remaining 622 belong to miscellaneous minor castes. Marathi is the principal language of the district being spoken by about ninety per cent. of the population.

BROAD OCCUPATIONS

According to main occupations, 565,330 persons or 56·0 per cent. of the population are dependent for their livelihood on Agriculture. Industry including mines supports 117,049 or 11·6 per cent. Trade and Transport are the

means of livelihood of 91,201 persons or 9·0 per cent., 21,382 persons or 2·1 per cent. are supported by Professions and the Liberal Arts while the remaining 214,069 or 21·2 per cent. of the population follow miscellaneous occupations.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population according to occupations—and in a few cases according to castes. The figures have been based on the census of 1921 and include both workers and dependents.

Pasture and Agriculture.—Of the total population of 582,014 supported by pasture and agriculture 468,258 are ordinary cultivators, 73,310 are farm servants and field labourers while 22,076 persons are dependent for their livelihood on income from rent of agricultural land. Of the 15,129 persons engaged in the raising of farm stock almost the whole are herdsmen, shepherds and goat-herds numbering 13,553.

Fishing.—Fishing supports 2,973 persons in the district.

Industry.—Under this head may be mentioned the textile workers such as weavers and other workers in cotton, wool, silk, etc., at home and in factories, who number 22,624. The wood industry supports 14,486 persons comprising mostly the carpenters and joiners numbering 11,500 and basket-makers, bamboo workers, etc., who number 2,329. In the metal industry which occupies 7,373 persons workers in iron number 4,064 while those engaged in brass and copper work are 2,347. The food industry which affords livelihood to 5,101 persons includes 2,517 butchers. Rice-pounders and flour-grinders (210), grain-parchers (281), sweet-meat makers (110) and toddy-drawers (158) may also be mentioned under this head. The manufacturers of vegetable oils number 3,160. In the building industry supporting 14,224 persons, the brick-layers and masons numbering 6,494, stone-cutters and dressers 5,120 and excavators, earth-workers and well-sinkers 2,023, deserve a mention. The brick and tile makers number 796 while the number of potters is 4,172. Of the other persons supported by various occupations falling under this head, the chief are the tailors (6,134), shoe-makers (3,532), washermen (4,226) and barbers (6,654). Generally speaking it may be fairly correctly stated that almost all the persons engaged in industry get ample work and decent wages now-a-days and their condition is therefore on the whole fair.

Trade.—The trade in foodstuffs ranks first under this head and supports 28,398 persons. Of these grocers and sellers of oil, salt, condiments, spices, fruits, etc., number 15,884. Sellers of milk, butter, fish and poultry (4,545), grain and pulse-dealers (2,731), dealers in hay, grass and fodder (994) and sellers of fuel, cowdung cakes, etc. (3,652), are the others under this head who deserve a mention. The trade in piece-goods and textiles of wool, cotton, silk and other fabrics supports 4,750 persons. As a class the traders are mostly secure.

Professional Beggars.—These number 11,273. In times of famine many of these may require relief.

Depressed Classes.—Under this head may be mentioned the *Chambhars* (17,110), the *Bhangis* (2,121), the *Mahars* and *Dheds* (78,017) and the *Mangs* (24,919). The condition of some of these is not altogether satisfactory and they may hence require relief in times of famine.

Brahmans.—These number 56,545 and are mostly writers, Government servants, etc., and are fairly well off.

Musalmans.—They number 46,517 and follow different occupations such as butchers, weavers, betel-leaf sellers, etc. Their condition is on the whole fair.

Parsis.—They number 3,067 and are traders, contractors, Government servants, etc., and are quite secure.

Christians.—The number of Christians in the district is 17,737. Some of them are high officials. As a class they are secure.

ECONOMIC CONDITION

The population of the district is almost purely agricultural except at large towns and trade centres. Besides Poona, the head-quarter of the district, there are nine towns which have a population of over five thousand—Kirkee (18,357), Baramati (11,905), Lonavla (11,078), Junnar (7,381), Khed (7,013), Talegaon Dabhade (6,307), Saswad (5,019), Sirur (5,111) and Indapur (5,967). Baramati is growing rapidly under the stimulus of sugarcane and other high cultivation which is being largely resorted to on land commanded by the Nira canal. Since the withdrawal of the troops, the town of Sirur is gradually decreasing in importance. Here Captain Crawford has established a stud farm in the old cantonment grounds called the Willingdon Horse Stud.

During the last two decades there has been no marked change in the economic condition of the people except that as a result of the Great War there has been an all round rise in the cost of living and in the rates of wages. There seems however a slight but gradual improvement in the condition of the agriculturists as regards indebtedness.

MIGRATION

The existence of industrial towns is very useful in famine days in supplying a considerable market for labour. But unfortunately there are no such towns in the district except Poona city itself. A number of labourers come to Poona and get employment on construction works. The Tata Dam Works in Mawal taluka and Mulshi peta absorb a great amount of labour in days of famine and thus afford much relief. As soon as signs of famine or scarcity become apparent, the labourers and small agriculturists also migrate readily in search of labour to the busy centres like Bombay, Sholapur, Barsi, the Tata Tanks Works at Lonavla, Thokarwadi, Mulshi and the sugarcane crushing operations in Bhimthadi. A few resort to Khandesh districts and Berar during cotton picking season where they get handsome wages. The Hydro-electric group of works constructed in the Mawal taluka are the recent great industrial development. The Tata company has constructed three lakes—Walwhan, Bhushi and Shirota—in this (Mawal) taluka for the supply of electrical energy to industrial concerns in Bombay. These works, as already noted, support a great number of labourers. The G. I. P. Railway and the M. & S. M. Railway also give ready employment to the needy cultivators and labourers of this district and those of the Ahmednagar and Sholapur districts.

LIABILITY TO FAMINE

Mawal.—Though it is not liable to chronic distress from failure of rain the Mawal or Western hilly portion of the district cannot, as is shown by the experience of recent years, be called immune from famine. In 1876-77 parts of Junnar and Khed suffered from the widely spread drought and high prices. In 1896-97 the total rainfall was largely in excess of the average but it abruptly ceased in August, with the result that there was not sufficient moisture to mature the crops which survived the destruction caused by excessive rain in the first half of the season. In 1899-1900 the rainfall was markedly under the average and in Mulshi and Ambegaon pethas the distress was severe. In 1918-19 again the rainfall amounted to less than half the average and in the contraction of cultivation and meagreness of crop outturn this tract was no exception. It will thus be seen that the tract is not altogether free from danger of famine. The rainfall is, however, heavier and more regular than elsewhere in the district. In this lies its comparative immunity from famine, but the country itself is not rich nor are the cultivators more skilful and provident than elsewhere.

Transition Tract.—This tract enjoys a fairly regular rainfall but its partial immunity lies in a better water-supply from wells and water courses running from the hills, in a rainfall never excessive and more suitable for a great variety of cropping and in the longer interval between failure of rains as compared with the open plains of the east. Here the cultivation is not so speculative as in tracts farther east and the cultivators are able to practise forethought and system in their agriculture.

Desh.—The condition of the dry and sultry plains is one of constant uncertainty. The soil is rich but careful systematic rotation is impossible, for the character of the crop is decided chiefly by the prospects of the season. The large number of wells affords some protection but their effect in respect of famine protection must not be over-estimated as they become waterless in many cases and though deepened year after year the water level is often found to sink in the same degree.

FORMER FAMINES

The famine of **1876-77** was caused by an early failure of rain. At Poona 13·07 inches out of 14·09 inches, at Baramati 7·34 out of 7·54 inches and at Sirur the total rainfall of the year 10·94 inches fell before the end of August.

In **1896** the monsoon set in regularly in the middle of June. In the western hilly talukas an abnormal downpour in July and August caused great damage to the *kharif* crops on which these tracts mainly depend. In the eastern talukas the *kharif* rains were deficient. The monsoon ceased early in September and with no rain in October a nearly complete destruction of *kharif* crops followed, while *rabi* sowings could not be undertaken except under irrigation. The want of useful rain in the east in July and August of the succeeding year (1897) prolonged the distress and relief works could not be stopped till December 1897.

In **1899** the rainfall at Poona from June to December was only 9·96 inches and the practical cessation of the rain from the middle of September onwards resulted in a poor *kharif* harvest and in a wide-spread failure of the *rabi* crops. In 1900 the rainfall was very variable but casual showers saved the crops from absolute destruction. The absence of late rains, however, led to extensive loss of late crops. Relief measures were instituted in October 1899 and continued till November 1901, though from November 1900 the numbers fell by some two-thirds. In 1901 the *rabi* crops were again seriously affected by the deficiency in the rainfall from September onwards. Relief operations had to be undertaken

again in May 1902 but the following monsoon proved so favourable that all relief works were closed by the end of the year.

In **1905-06** the *kharif* rains were sufficient for sowing and development of the crops in Mawal but were very deficient in the Desh from the commencement. As a result the outturn of *kharif* crops was fair in the Mawal but very poor in the Deshi portion. The *rabi* rains were again insufficient in the Desh and also in Mawal both for the sowing and growth of the crops and as a consequence, though the crops in Mawal fared well partly on the strength of previous moisture and the *rabi* rains, the crops in the Desh failed. The season was thus considerably below the average particularly in the Desh. Great deficiency of food and fodder was experienced in the district and grain and grass had to be imported from outside.

In **1911-12** the rainfall was very deficient in the Desh portion and the crop outturn both early and late was extremely poor here. In the western portion of the district also it was much below the normal. But for the fact that there was an extensive local demand for labour at the time for the G. I. P. Railway viaduct near Campoli, the Tata Works at Lonavla, the Poona city drainage scheme, etc., the opening of relief works would have been necessary in parts of the Eastern Division. As it was, relief was confined to provision by Government of grass for cattle and doles to inferior village servants and infirm persons in the affected tract. The season was an extremely trying one for cattle on account of severe scarcity of fodder.

In **1918-19** every part of the district got less than half its average amount of rainfall which was at the same time not well distributed and in these circumstances a marked contraction of cultivation and a general failure of crops except the irrigated, was inevitable. Relief works were opened in various parts of the district, gratuitous relief was freely granted, suspensions and remissions were liberally made, cheap grain shops and grass depôts were opened in places and considerable quantities of food and fodder imported. The Tata Works, the Bhatgar Tank, the Nira Right Bank Canal, the Military Works and the Railway also provided considerable employment to the needy. The famine was one of the severest on record, though the severity was much lessened by provision of ample employment and other grants and facilities.

In **1920-21**, the *kharif* rains were adequate in the west but deficient in the east, where sowings were greatly restricted. September rains gave some hopes and *rabi* sowings were undertaken but there being very little rain later on, the crops never developed properly. Both the *kharif* and *rabi* crops in the east were thus almost a failure. Owing to continued high prices of food grains every class was more or less affected. But the poorer class, especially the agriculturists suffered most. Fortunately, the labour-market was most favourable at the time and wages were good and the labouring classes were not so hard hit as they would otherwise have been. As regards relief works the abundant demand for labour at (1) Andhra Valley Power Supply Company's Works at Thokarwadi in taluka Mawal, (2) the Tata Company's Works in Mulshi, (3) Sugarcane operations in Nira Valley and (4) large building and other construction work round about Poona attracted labourers from all parts of the district and even from the Ahmednagar district. To afford relief, improvement of certain roads in the district was also undertaken. Remissions and suspensions of land revenue, *tagai* advances, gratuitous relief to the needy were some of the other measures adopted to ameliorate the distress.

FORECAST OF RELIEF WORKERS

During the two recent famines of 1918-19 and 1920-21 it was found that the highest daily average of all persons in receipt of relief was 29,696 and was reached in May 1919. Out of this number 12,791 were gratuitously relieved. The maximum number of persons likely to require employment on relief works may, therefore, be taken at twenty thousand.

POONA STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

Irrigation Abstract, 1922-23.

Cultivated and Uncultivated Area, 1918-19.

Irrigation Abstract, 1918-19.

Crops, 1922-23.

Crops, 1918-19.

Agricultural Stock, 1918-16.

Agricultural Stock, 1919-20.

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POONA STATISTICAL TABLES—II.

Water Supply 1922-23.

No.	Taluka.	Government Canals. For irrigation.	Government Canals. For drinking.	Government Canals. For Cattle and Washing.	Private Canals. For drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kachha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Tanks. For drinking.	Tanks. For Cattle and Washing.	Other Sources. For irrigation.	Other Sources. For drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Haveli ..	2	..	..	..	..	480	2,510	2,990	238	9	21	6	15	..	1	34	6
2	Mulshi P. ..	..	..	..	..	..	3	3	6	262	4	1	1	4	..	..	1	..
3	Maval ..	..	..	..	..	..	11	86	97	492	54	2	11	26	2	13	..	..
4	Khed ..	..	..	..	..	..	855	3,150	4,005	498	42	67	14	1	3	32	..	9
5	Ambegaon P. ..	..	..	..	..	..	132	880	1,012	163	77	3	9	..	..	32	..	..
6	Junnar ..	..	..	..	..	..	555	3,975	4,530	1,330	37	10	4	18	3	21	..	..
7	Sirur ..	..	..	..	..	..	551	2,266	2,817	232	37	1	15	15	..	132	..	5
8	Purandhar ..	1	..	..	..	..	520	2,574	3,094	476	48	3	4	..	166	1	..	..
9	Bhimthadi ..	2	..	..	..	..	728	2,493	3,221	522	27	1	7	7	8	2	1	..
10	Dhond P. ..	1	..	..	..	..	208	980	1,268	119	16	4	1	9	1	1	..	..
11	Indapur ..	2	..	..	..	..	1,295	1,088	2,383	460	11	15	..	5	1	55	..	2
	Total ..	3	..	..	..	..	5,418	20,005	25,423	4,804	335	208	35	112	183	349	22	

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Nira Left Bank Canal ..	274,447	227,670	113,280	113,280	40,791	29,096	69,887
2	Shetphal Tank ..	*25,000	*25,000	4,200	4,200	3,710	1,427	5,137
3	Mutha Canals ..	94,087	149,800	16,800	16,800	19,178	1,215	20,393
4	Matoba Tank ..	10,700	7,133	3,250	3,250	2,437	2,573	5,010
5	Kasurdi Tank ..	597	478	150	150	56	41	97
6	Shirsuphal Tank ..	4,500	2,500	1,800	1,800	725	609	1,334
7	Bhadalvadi Tank ..	3,000	2,400	2,000	2,000	977	539	1,516
	Total ..	412,331	314,981	141,480	141,480	68,874	35,500	104,374

*This area is also commanded by the Nira Right Bank Canal.
†Includes 7,133 acres commanded by Matoba Tank.

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total No.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.	Area.	Assessment.	Incidence per acre.	Population.	Incidence per Head of population including Alienations.
		No.	No.	No.	No.	No.	No.	Acs.	Acs.	Rs. a. p.	Rs. a. p.	Acres.	Rupees.	Rs. a. p.	No.	Rs. a. p.
1	Haveli ..	11,012	9,426	1,665	164	12	22,279	273,620	12·3	9 6 10	2 1	311,070	2,21,131	0 13 2	543,726	0 6 10
2	Mulshi P. ..	4,857	2,449	457	65	1	7,839	79,589	10·6	7 0 0	0 11 0	78,171	50,788	0 11 0	25,654	1 15 8
3	Maval ..	9,178	4,358	1,218	60	1	11,815	131,476	11·1	9 0 0	0 12 0	115,992	1,04,626	0 14 0	63,084	1 10 6
4	Khed ..	7,925	8,246	2,256	103	..	18,530	216,076	11·7	10 3 1	0 14 6	216,358	1,90,238	0 14 1	72,977	2 9 10
5	Ambegaon P. ..	4,476	4,101	760	36	..	9,377	93,653	9·9	7 5 0	0 11 6	93,273	67,389	0 11 6	39,335	1 14 6
6	Junnar ..	12,196	11,022	2,139	31	..	25,388	237,965	9·4	9 6 0	0 15 5	233,332	2,26,058	1 0 2	98,826	2 4 7
7	Sirur ..	5,894	5,462	2,164	164	1	11,685	260,548	22·3	16 2 4	0 11 7	384,597	1,88,539	0 7 10	60,834	3 1 7
8	Purandhar ..	15,010	5,630	782	122	..	21,544	220,259	10·2	9 0 0	0 13 0	220,759	87,716	0 6 3	71,119	1 10 2
9	Bhimthadi ..	5,446	6,925	2,508	148	..	15,028	339,446	22·6	16 0 0	0 11 9	339,446	1,58,763	0 7 0	98,960	1 9 9
10	Dhond P. ..	2,066	3,148	1,858	120	5	7,197	242,082	29·5	14 8 0	0 12 0	178,368	1,23,098	0 11 0	38,999	3 2 6
11	Indapur ..	3,900	6,640	2,410	285	4	13,239	266,319	20·1	9 4 0	0 7 6	266,319	1,22,387	0 7 4	60,531	2 0 4
	Total ..	76,960	68,410	18,227	1,298	26	162,921	2,360,585	14·5	10 1 3	0 11 1	2,428,183	16,41,224	0 10 10	970,045	1 11 1

Incidence of Assessment, 1920-21.

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Nira Left Bank Canal ..	274,447	227,670	113,280	113,280	31,994	17,686	49,680
2	Shetphal Tank ..	*25,000	*25,000	4,200	4,200	3,251	1,511	4,762
3	Mutha Canals ..	94,087	149,800	16,800	16,800	13,228	2,077	15,305
4	Matoba Tank ..	10,700	7,133	3,250	3,250	1,616	294	1,910
5	Kasurdi Tank ..	597	478	150	150	7	..	7
6	Shirsuphal Tank ..	4,500	2,500	1,800	1,800	751	904	1,655
7	Bhadalvadi Tank ..	3,000	2,400	2,000	2,000	1,003	387	1,390
	Total ..	412,331	314,981	141,480	141,480	51,850	23,059	74,909

*This area is also commanded by the Nira Left Bank Canal.
†Includes 7,133 acres commanded by Matoba Tank.

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1	Poona (Haveli) ..	Maximum 1883 ..	..	..	0·18	0·36	0·89	9·07	6·24	4·06	12·24	12·89	1·49	..	47·42
		Minimum 1899 ..	..	..	..	0·41	0·47	2·75	1·39	0·63	2·67	1·05	..	..	12·37
		Average ..	0·09	0·05	0·05	0·60	1·42	5·35	7·20	3·66	5·67	4·01	1·11	0·29	28·86
		Rainfall for 1922-23 ..	..	0·01	1·54	0·95	0·66	5·11	6·11	1·74	0·51	2·45	4·99	..	23·47
		Maximum 1914 ..	..	..	..	0·17	7·36	51·47	18·79	7·12	3·21	0·32	..	..	88·44
		Minimum 1922 ..	0·38	..	2·58	0·39	0·11	6·11	1·74	0·51	2·45	4·99	..	..	24·93
2	Paud P. (Mulsi) ..	Average ..	0·04	0·04	0·04	0·39	0·79	9·95	23·52	14·10	6·43	3·21	0·88	0·15	59·59
		Rainfall for 1922-23 ..	..	..	2·03	0·70	..	12·22	25·12	11·52	2·46	4·00	4·79	..	63·01
		Maximum 1914 ..	..	..	..	..	7·16	30·49	14·99	8·94	7·06	0·76	0·63	0·40	70·63
		Minimum 1918 ..	0·17	..	4·15	0·71	..	2·97	9·20	0·25	..	0·06	..	..	17·51
3	Vadgaon (Maval) ..	Average ..	0·03	0·04	0·03	0·34	0·76	7·22	14·51	9·99	3·57	2·54	0·62	0·14	41·19
		Rainfall for 1922-23 ..	..	..	0·58	0·83	0·28	6·28	13·72	5·59	2·53	1·77	2·92	..	34·50
		Maximum 1896 ..	..	..	..	..	4·61	45·87	24·46	24·55	9·17	2·61	..	..	249·74
		Minimum 1899 ..	..	..	4·61	0·11	23·20	16·65	18·78	3·78	..	..	..	..	67·13
4	Lonavli D. ..	Average ..	0·06	0·03	0·03	0·24	0·99	27·67	66·41	46·92	19·44	5·93	0·87	0·15	166·74
		Rainfall for 1922-23 ..	..	..	..	..	..	26·78	76·96	77·73	22·92	2·30	1·90	..	162·38
		Maximum 1915 ..	..	..	1·29	0·05	13·85	9·37	1·82	10·41	1·38	0·52	..	..	39·19
		Minimum 1899 ..	..	..	1·81	0·01	1·23	0·78	1·93	0·66	0·06	..	..	..	13·63
		Average ..	0·07	0·07	0·07	0·36	1·05	4·93	6·50	3·50	4·70	3·19	0·70	0·13	25·27
		Rainfall for 1922-23 ..	..	..	2·17	0·56	0·97	5·71	9·76	1·32	3·19	2·56	5·85	..	31·36
		Maximum 1885 ..	..	..	..	0·10	1·70	9·50	6·60	3·89	7·78	11·13	..	..	47·79
5	Khed ..	Minimum 1918 ..	0·12	..	0·17	..	4·36	0·25	0·43	1·88	2·59	0·76	0·22	0·20	10·97
		Average ..	0·06	0·04	0·05	0·39	4·69	5·53	2·99	4·36	2·65	0·80	0·10	0·10	22·58
		Rainfall for 1922-23 ..	..	..	0·86	0·60	0·25	3·39	4·48	2·23	1·58	3·25	10·42	..	27·08
		Maximum 1882 ..	..	..	..	0·40	0·76	7·22	11·15	19·65	7·98	7·03	0·48	..	54·67
		Minimum 1918 ..	1·11	..	0·48	0·02	0·28	1·15	4·45	0·53	2·79	0·50	..	..	10·32
6	Ghods P. (Ambegaon.)	Average ..	0·08	0·05	0·08	0·38	1·82	4·95	4·83	4·41	2·79	0·98	0·13	0·13	28·47
		Rainfall for 1922-23 ..	..	..	1·13	0·64	0·55	4·19	5·69	3·16	4·72	1·98	4·21	..	23·87
		Maximum 1916 ..	..	..	..	..	2·96	4·39	5·77	7·56	12·82	7·98	0·30	..	41·80
		Minimum 1918 ..	0·15	..	0·64	..	0·28	1·20	1·27	5·01	0·18	0·05	0·30	..	12·68
8	Junnar ..	Average ..	0·10	0·11	0·04	0·30	0·84	5·29	8·65	5·12	4·75	2·79	0·92	0·21	29·16
		Rainfall for 1922-23 ..	..	..	2·22	0·23	0·77	4·44	6·80	2·49	4·27	1·95	5·12	..	28·02
		Maximum 1916 ..	..	..	..	0·02	1·68	2·96	10·51	0·69	9·32	13·38	1·36	..	40·93
		Minimum 1918 ..	..	..	..	..	1·76	1·41	0·57	1·85	0·41	0·03	0·28	0·23	6·28
9	Ghodnadi (Sirur) ..	Average ..	0·13	0·09	0·09	0·27	1·13	4·96	3·03	1·71	6·36	2·24	0·89	0·22	20·96
		Rainfall for 1922-23 ..	..	..	1·44	0·24	..	1·06	0·13	0·18	9·54	1·56	10·23	..	24·26
		Maximum 1896 ..	..	..	..	..	2·67	14·36	11·25	4·52	7·38	0·48	..	..	36·00
10	Talegaon (Dhamdhere). D.	Minimum 1918 ..	0·59	..	..	4·08	0·41	0·23	0·93	6·76	0·35	0·85	1·10	..	9·30
		Average ..	0·11	0·13	0·07	0·41	1·19	4·44	3·80	2·37	2·92	2·35	0·91	0·20	20·78
		Rainfall for 1922-23 ..	..	..	0·81	1·78	2·43	1·97	0·92	0·47	2·00	4·79	..	..	15·17
		Maximum 1892 ..	..	..	..	0·19	0·94	10·79	10·45	2·63	7·38	10·36	0·22	..	43·96
11	Saswad (Purandhar).	Minimum 1918 ..	0·05	..	0·08	..	0·44	0·71	0·43	1·91	1·00	0·65	0·45	0·25	12·05
		Average ..	0·04	0·08	0·09	0·54	1·18	4·13	4·93	2·39	4·28	3·33	0·97	0·24	22·20
		Rainfall for 1922-23 ..	..	0·01	0·81	2·31	..	2·04	3·22	0·27	0·22	2·91	10·16	..	19·95
		Maximum 1892 ..	..	..	..	0·45	3·77	9·62	8·76	1·80	3·67	15·76	0·49	..	44·50
12	Jejuri D. ..	Minimum 1876 ..	..	..	..	..	..	0·56	2·12	0·86	0·33	0·10	..	..	3·97
		Average ..	0·11	0·08	0·10	0·39	1·26	3·67	3·49	1·61	4·08	3·24	1·04	0·42	19·49
		Rainfall for 1922-23 ..	0·21	..	0·79	0·31	..	3·28	1·78	0·54	0·02	4·69	12·47	..	24·09
		Maximum 1892 ..	..	..	..	0·36	0·55	11·07	6·73	3·08	7·65	14·30	1·23	..	41·57
13	Baramati ..	Minimum 1876 ..	..	..	0·53	0·09	4·56	0·81	0·22	1·13	0·09	0·11	..	..	7·54
		Average ..	0·18	0·06	0·11	0·54	1·52	3·75	2·29	2·02	3·82	3·20	0·99	0·42	20·84
		Rainfall for 1922-23 ..	0·39	..	0·74	0·26	..	3·35	1·82	0·35	2·36	0·87	9·19	..	19·33
		Maximum 1916 ..	..	..	0·13	0·03	3·65	2·27	9·55	0·63	7·04	5·49	1·09	..	30·78
		Minimum 1911 ..	..	..	..	..	..	1·79	2·55	2·03	1·81	0·14	0·91	0·18	9·33
14	Dhond P. ..	Average ..	0·14	0·08	0·09	0·32	1·11	3·54	4·27	1·73	5·22	2·17	0·89	0·26	18·23
		Rainfall for 1922-23 ..	0·43	..	2·52	0·13	..	2·96	7·66	0·19	6·89	1·98	8·95	..	31·51
		Maximum 1916 ..	..	..	..	1·13	4·62	1·13	16·59	3·69	8·99	5·94	4·09	..	46·38
		Minimum 1876 ..	..	..	0·10	..	..	4·63	1·52	0·23	0·44	0·06	0·13	0·06	6·04
15	Indapur ..	Average ..	0·14	0·09	0·11	0·36	1·14	3·56	2·74	2·51	6·46	3·36	0·99	0·54	22·00
		Rainfall for 1922-23 ..	0·04	..	1·32	0·22	0·07	4·71	1·19	..	2·31	1·81	11·22	..	23·39

Temperature Details (Poona).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	85	90	96	103	98	85	82	82	85	91	88	86
	,, minimum ..	50	59	59	69	72	71	71	68	69	65	57	56
	Absolute maximum ..	90	97	103	108	104	87	86	86	89	97	91	90
	,, minimum ..	46	51	54	61	69	66	68	65	62	57	51	52
1914	Mean maximum ..	85	90	95	98	100	90	80	80	83	89	86	85
	,, minimum ..	54	57	69	67	73	71	71	69	66	66	61	55
	Absolute maximum ..	89	96	101	106	107	96	88	85	88	91	91	90
	,, minimum ..	48	51	52	60	70	68	68	67	65	55	51	48
1915	Mean maximum ..	85	89	93	99	97	94	84	81	84	86	88	82
	,, minimum ..	55	55	63	69	73	73	71	69	66	66	63	52
	Absolute maximum ..	91	95	102	104	107	103	78	85	91	93	91	86
	,, minimum ..	48	44	52	63	71	67	67	68	64	56	52	44
1916	Mean maximum ..	86	88	98	101	104	86	86	81	84	86	84	82
	,, minimum ..	53	55	63	69	73	72	72	70	69	68	64	53
	Absolute maximum ..	91	95	102	105	107	94	91	86	94	90	87	88
	,, minimum ..	46	48	54	63	68	68	69	64	64	63	55	45
1917	Mean maximum ..	85	87	94	97	94	86	83	82	83	82	83	82
	,, minimum ..	55	56	60	65	68	72	71	70	69	68	58	52
	Absolute maximum ..	91	94	98	102	99	96	88	89	92	89	89	87
	,, minimum ..	46	50	50	60	61	68	69	66	67	59	50	46
1918	Mean maximum ..	83	90	95	99	94	89	71	86	83	87	95	90
	,, minimum ..	52	56	66	64	71	71	70	67	66	63	63	57
	Absolute maximum ..	89	97	101	104	103	92	98	89	95	98	94	91
	,, minimum ..	45	51	51	56	66	68	68	68	61	58	53	50
1919	Mean maximum ..	86	91	96	100	99	87	82	81	84	89	87	84
	,, minimum ..	54	56	62	67	71	70	69	68	66	66	63	53
	Absolute maximum ..	91	96	103	104	105	98	89	89	93	96	93	87
	,, minimum ..	46	46	54	55	66	69	68	69	64	57	52	46
1920	Mean maximum ..	86	89	97	99	98	88	80	82	86	86	89	88
	,, minimum ..	58	54	60	67	70	72	70	68	68	66	56	50
	Absolute maximum ..	91	97	103	104	104	101	90	88	92	94	91	91
	,, minimum ..	49	47	53	58	67	69	68	62	65	56	48	44
1921	Mean maximum ..	89	91	100	103	100	91	94	80	83	89	86	85
	,, minimum ..	52	53	61	69	70	72	71	68	67	65	56	52
	Absolute maximum ..	93	95	105	106	109	100	90	84	88	93	89	90
	,, minimum ..	42	47	52	62	65	68	69	65	61	52	51	47
1922	Mean maximum ..	86	91	97	101	99	89	80	80	83	90	82	82
	,, minimum ..	56	57	61	70	72	72	72	68	67	64	61	50
	Absolute maximum ..	91	96	101	106	103	96	84	84	86	89	89	85
	,, minimum ..	45	46	51	58	66	69	69	65	62	58	47	43

Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur-Dal.	Jowari-Kadbi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Poona (Haveli) ..	18	15	9	10	44	42	1 8 9	0 10 6	0 9 0
	Non-headquarter towns.									
2	Paud P. (Mulshi) ..	16	13	10	8	..	..	1 8 6	0 10 0	0 8 0
3	Vadgaon (Maval) ..	14	11	9	8	..	..	1 8 0	0 9 0	0 8 0
4	Khed ..	..	15	9	..	36	60	1 8 0	0 10 0	0 8 0
5	Ghods P. (Ambegaon) ..	20	14	8	8	142	142	1 15 4	0 8 0	0 9 10
6	Junnar ..	18	14	8	8	50	58	1 5 2	0 8 0	0 8 0
7	Ghodnadi (Sirur) ..	18	14	8	8	..	..	0 12 2	0 8 0	0 8 0
8	Saswad (Purandhar).	21	17	10	9	63	98	1 4 0	0 8 0	0 9 11
9	Baramati ..	22	18	10	9	107	..	1 7 10	0 8 5	0 10 0
10	Dhond P. ..	21	16	11	9	27	..	1 4 7	0 9 4	0 6 10
11	Indapur ..	22	..	9	9	142	..	1 1 0	0 6 7	0 8 6
	Average of the non-headquarter towns.	19	15	9	9	71	89	1 4 11	0 8 2	0 8 8

Prices—Pre-war Normal.

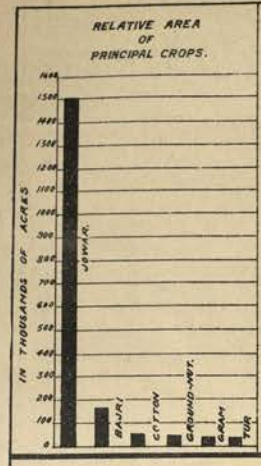
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur-Dal.	Jowari-Kadbi.	Wages per diem per Man. Dry Grass.	Skilled Labour.	Ordinary Labour.	Field Labour
								Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Poona (Haveli) ..	26	23	15	16	56	91	0 12 4	0 5 5	0 5 5
2	Paud P. (Mulshi) ..	23	22	16	15	191	191	0 9 7	0 7 4	0 5 0
3	Vadgaon (Maval) ..	22	22	19	14	75	128	0 14 8	0 8 5	0 6 0
4	Khed ..	27	22	19	15	128	83	0 8 0	0 5 3	0 4 0
5	Ghods P. (Ambegaon) ..	26	24	15	14	150	183	0 12 0	0 9 3	0 7 3
6	Junnar ..	30	26	16	16	77	91	0 12 5	0 9 5	0 7 5
7	Ghodnadi (Sirur) ..	30	22	14	17	98	183	0 12 0	0 9 0	0 7 0
8	Saswad (Purandhar).	27	24	15	15	62	107	0 12 3	0 9 4	0 7 0
9	Baramati ..	28	25	13	15	72	..	0 12 3	0 9 4	0 7 0
10	Dhond P. ..	29	25	19	15	91	..	0 8 10	0 5 11	0 5 8
11	Indapur ..	30	23	14	17	80	91	0 7 8	0 5 3	0 4 3
	Average of the non-headquarter towns.	28	25	15	15	93	125	0 11 0	0 8 3	0 6 4

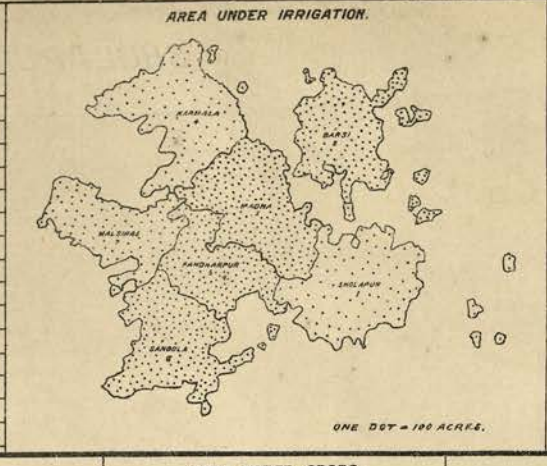
Famine Relief—Average Daily Number.

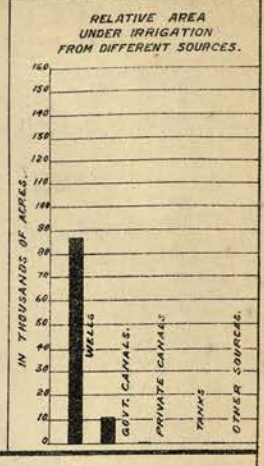
Month	1911-12. Relief Workers.	1911-12. Dependants.	1911-12. Gratuitously relieved.	1911-12. Total Daily Average.	1911-12. Price in lbs. per Rupee. Jowari.	1911-12. Price in lbs. per Rupee. Bajri.	1918-19. Relief Workers.	1918-19. Dependants.	1918-19. Gratuitously relieved.	1918-19. Total Daily Average.	1918-19. Price in lbs. per Rupee. Jowari.	1918-19. Price in lbs. per Rupee. Bajri.	1920-21. Relief Workers.	1920-21. Dependants.	1920-21. Gratuitously relieved.	1920-21. Total Daily Average.	1920-21. Price in lbs. per Rupee. Jowari.	1920-21. Price in lbs. per Rupee. Bajri.
							No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
December							..	..	1,399	1,399	7	6	..	..	..	..	..	..
January							..	..	1,705	1,705	7	6	..	..	633	633	9	11
February							5,244	1,365	3,144	9,753	7	6	..	..	2,109	2,109	9	10
March							14,339	5,736	5,415	25,490	8	7	1,074	..	2,531	3,607	9	10
April	No	Relief	Works	were	ope	ned.	12,952	3,508	8,974	25,434	9	7	1,409	..	3,952	5,407	9	10
May							13,169	3,796	12,791	29,699	8	7	2,695	..	4,387	7,082	9	9
June							10,246	2,713	13,118	26,077	8	7	2,715	..	5,038	7,753	8	8
July							8,952	2,086	13,263	24,331	8	7	2,616	..	4,997	7,613	8	8
August							5,257	1,061	11,769	18,087	9	9	1,112	..	4,344	5,456	8	8
September							..	..	10,993	10,993	9	9	..	..	..	..	..	..
Average for the period							7,019	2,020	8,257	17,296	8	7	1,458	..	3,499	4,957	9	9

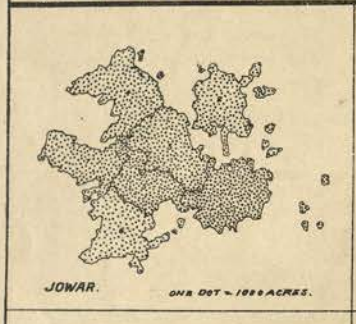
SHOLAPUR DISTRICT.

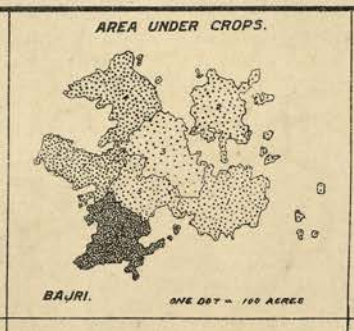
SHOLAPUR DISTRICT.

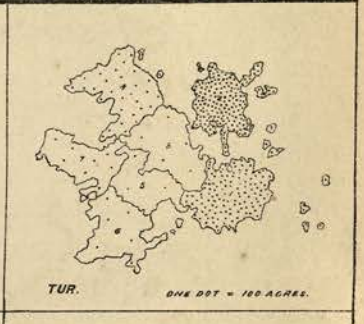


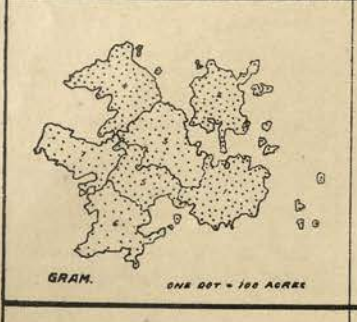


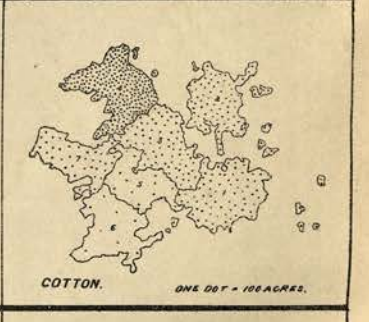


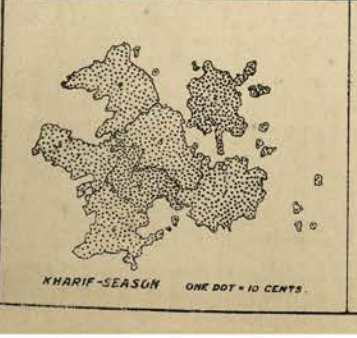


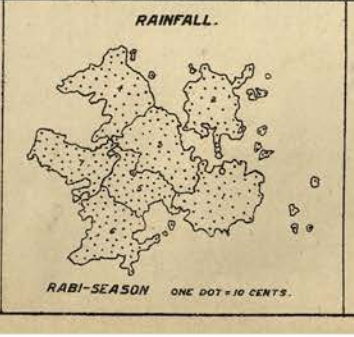


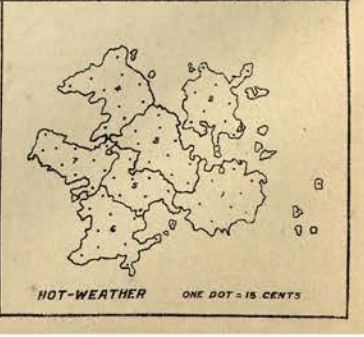








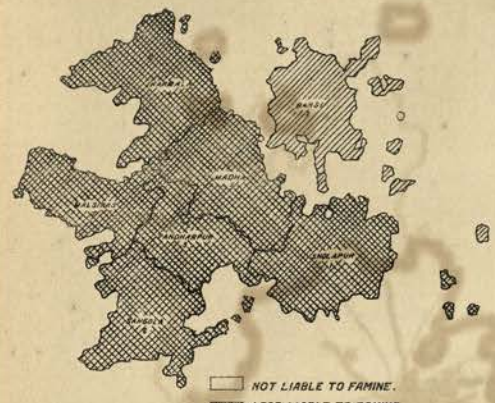




SHOLAPUR DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.



INTENSITY OF FAMINE IN 1911-12.

INTENSITY OF FAMINE IN 1918-19.

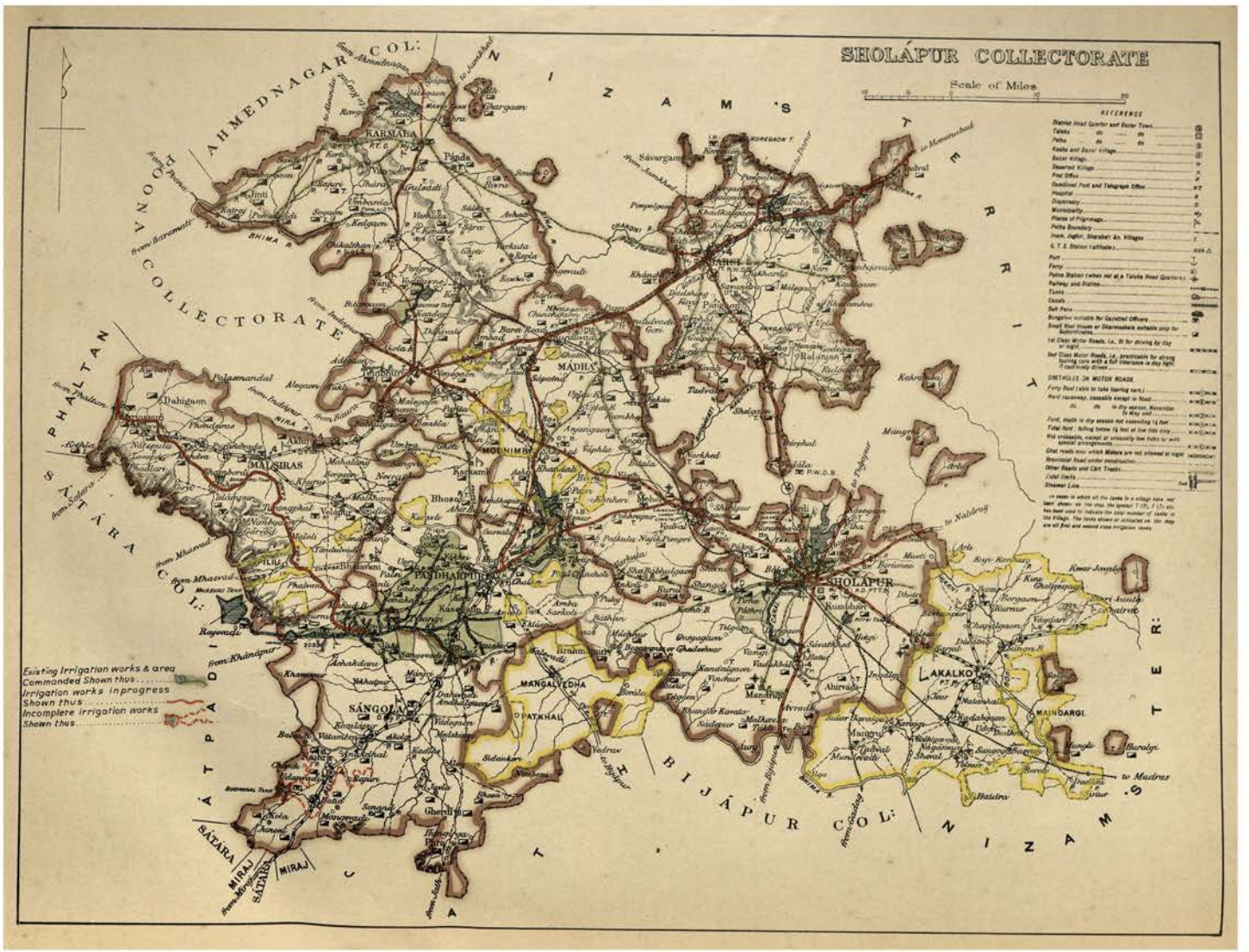
INTENSITY OF FAMINE IN 1920-21.

NUMBER OF CATTLE.

1909-10

1915-16

1919-20


SHOLÁPUR COLLECTORATE
Scale of Miles
REFERENCE
AHMEDNAGAR COL:
POONA COLLECTORATE
NIZAM'S TERRITORY
PHALTAN
SÁTÁRA COL:
ÁTPADI
BIJÁPUR COL:
JATI
KARMALA
BARSI
MÁDHA
MOUNIMBA
MALSIRAS
PANDHARPUR
SHOLÁPUR
LAKALKOT
MAINDARGI
SÁNGOLA
MANGALVEDHA
PATKHAL
SÁTÁRA
MIRAJ
Existing Irrigation works & area Commanded Shown thus
Irrigation works in progress Shown thus
Incomplete irrigation works Shown thus

SHOLAPUR

POSITION AND AREA

The district of Sholapur lies between 17° 8′ and 18° 33′ north latitude and 74° 37′ and 76° 26′ east longitude and occupies an area of 4,556 square miles. It is bounded on the north by Ahmednagar district and the Nizam's Territory, on the east by the Nizam's Dominions and the State of Akalkot, on the south by Bijapur district and the States of Jath and Miraj and on the west by Aundh State, Satara district, Phalthan State and Poona and Ahmednagar districts. On the west in some places Miraj villages are included and isolated Sholapur villages lie beyond the district limits. The contiguity of non-British Territory adds to the difficulties of famine organization.

PHYSICAL FEATURES

Except north of Barsi, west of Madha and south-west of Malsiras and of Karmala, where there is a good deal of hilly ground, the district is generally flat or undulating. Most of the surface rolls in long low uplands separated by hollows with an occasional level. The chief rivers are the Bhima and its tributaries the Man, the Nira and the Sina, all flowing towards the south-east with the exception of the Man which runs north-east for fifty miles within the limits of the district. Besides these there are several minor streams.

CLIMATE

The climate, except from March to May, is healthy and agreeable. In the hot season, March to June, the climate is very hot and oppressive in the day time though cool at night. During the cold season from November to February the weather with keen easterly and north-easterly winds is clear and bracing.

RAINFALL

The rainy season is pleasant ; the sky is more or less overcast and the rain falls in heavy showers, alternating with intervals of sunshine. The annual rainfall averages about twenty-five inches, being on the whole scanty and uncertain. Barsi owing to the proximity of the Bala ghat hills is comparatively well off with an average fall of twenty-nine inches, while Madha and Karmala receive twenty-six and twenty-three inches respectively, but so unevenly distributed that only one out of every four seasons can be adjudged really satisfactory. Malsiras has the lowest average, namely, twenty inches. Except Sangola and Malsiras talukas where the soil is light and stony and which are hence capable of yielding little but early monsoon crops, the district depends almost entirely on its *rabi* crops. The south-west monsoon reaches it only in fitful gusts and is never to be trusted. The duration of the rainy season is short. Ante-monsoon showers are scanty but useful for the preparation of the land and the district chiefly depends on the amount and seasonableness of the August, September and October rains of the north-east monsoon.

SOILS

The soil of Sholapur is of three kinds : black, coarse gray, or reddish. Except in Barsi taluka, where black soil is the rule and coarse gray is rare most of the district is either gray or red. The black soil is chiefly confined to the banks of the rivers and large streams. The soil of the uplands is shallow and more suitable for sheep-grazing than for cultivation. The deeper soil of the valleys with careful tillage and with seasonable rain can yield the richest crops.

CROPS

The staple of the district is late *jowar*. In Malsiras and Sangola, *bajri* is also important but nowhere else. Wheat is a large crop but it is frequently an irrigated and inferior variety. The cotton crop is important but its area fluctuates considerably. Oil-seeds are important, being grown as row crops in *jowar* fields. In a normal year, *jowar* occupies over fifteen lakhs of acres, *bajri* about two lakhs and cotton from fifty to sixty thousand acres. Wheat is grown to the extent of twenty-five to thirty thousand acres. Under oil-seeds, groundnut with an area approaching fifty thousand acres stands first. Linseed with fifteen and sesame with five thousand acres are the other important oil-seeds.

CATTLE

The chief breeds of cattle are the *khilari*, raised by *Dhangars* ; the *Deshi* or local, bred by *Lamanis* and breeds from Malwa, Gujarat and Gokak in Belgaum. The *khilari* breed is the best, and the *deshi* is the commonest. Buffaloes are classed as *gaulis* or ' milkmen's ' and *deshi* or ' local '. The dry plains of the southern talukas are specially suited for rearing sheep and goats. The *Dhangars* breed flocks of sheep and the poorer classes keep goats. Donkeys are bred by *Beldars* or quarrymen and pigs are reared by *Vaddars* or earth workers.

The cattle are grazed and the pasture is supplemented by the *jowari* fodder. Grass is cut green for immediate consumption, but is not usually stacked. Fodder, the by-product of the cereals, is, however, carefully preserved in stacks, well-thatched with sides protected by thorns from cattle and from damp by a coating of mud and cowdung. On the whole, the question of fodder for cattle is in this district nearly as important in famine time as that of food for the people.

FORESTS

The dry shallow soil of the uplands of Sholapur is ill-suited for trees. There are a few square miles of pasture land in charge of the Revenue Department. There are no protected forests. The forest area is much scattered. It may be roughly divided into two tracts ; (1) on the hills between Barsi and the Nizam's territories in the extreme north-east and (2) on the hills to the south of Malsiras and Sangola in the extreme south-west. The forest lands are of two classes ; scrub forest and *babul* meadows. The scrub forest is found on the hills and *babul* meadows occur all over the district. On the whole the forests of the district are poor and yield little except some firewood for local use and some grass for local consumption.

LIABILITY TO FAMINE

The whole district except Barsi taluka is liable to famine. A certain measure of protection is secured by the canals from the reservoir at Ekruk, Ashti, Koregaon and the Pathri and Wadshivne Tanks, the details of which are given below. The canals from the Mhasvad Tank (see Satara account) also irrigate parts of Pandharpur and Sangola talukas. All these taken together, however, afford protection only to a small part of the district, the protected area being estimated at about a hundred square miles out of the total area of nearly four and a half thousand square miles. The work of the Nira Right Bank Canal is expected within a few years to be completed. It will irrigate a considerable area in Sangola and Malsiras talukas.

Ekruk Tank and Canals.—Ekruk is a large tank about three miles from Sholapur city, from which three canals take off, two high level and one perennial. The high level canals are eighteen and four miles long and the perennial twenty-six miles long. The culturable area commanded by the canals is seventeen thousand acres of which the average area irrigated is about four thousand and a half acres. This low proportion is due to the fact that the tank is the source of water-supply to the city of Sholapur and to the Mills and Railway and in consequence irrigation has to be restricted to a considerable extent. The canals irrigate about five hundred acres of sugarcane every year. The tank was constructed in 1872 at a cost of over fourteen lakhs of rupees and can store 3,160 million cubic feet, though this figure is only realised once in five years when the monsoon is a good one. The catchment area is 159 square miles which on an average yields 2,113 million cubic feet.

Ashti Tank.—This tank lies in the south of Madha taluka and was constructed in 1876-77 at a cost of over eight lakhs of rupees. It is a purely irrigation tank. It has two canals fifteen and twelve miles long which command a culturable area of 11,800 acres, the average irrigation being four thousand acres. The main irrigation is *rabi*. The catchment area is ninety-two square miles and capacity of tank 1,419 million cubic feet.

Koregaon Tank.—This tank lies in the extreme north of Barsi taluka. It is a very old small tank and came under the charge of the Public Works Department in 1886. It is purely an irrigation tank, with two canals about four miles long, a commanded area of 2,394 of which 1,050 acres are culturable. The average irrigation is only about a hundred acres. The catchment area is seven square miles and capacity over eighty-four million cubic feet.

Pathri Tank.—This tank lies in north of Barsi taluka and was constructed in 1896-97 at a cost of over six lakhs of rupees. Like Ekruk it is only partially an irrigation tank, the town of Barsi being dependent on it for its water-supply. It has one canal nearly five miles long which commands an area of 4,586 of which only 2,500 acres are culturable. The average area irrigated is, however, only seven hundred acres. The comparatively small area of irrigation is due to the fact that the water has to be reserved for Barsi town and in consequence irrigation has to be restricted.

The catchment area is twenty-seven and a half square miles and capacity of tank 407 million cubic feet.

Wadshione Tank.—This tank lies in Karmala taluka about three miles from Kem station on the G. I. P. Railway and was constructed in 1901 at a cost of over four lakhs of rupees. It is purely an irrigation tank with one canal about six miles long and a commanded area of 3,559 acres of which only 1,763 acres are culturable. The area irrigated on an average is about a thousand acres. The catchment area is fourteen and a half square miles and capacity of tank 203 million cubic feet.

The cause of famine in the district is, as elsewhere in the Deccan, failure or unseasonableness of the rainfall. Sholapur suffered very severely from the rat plague in 1879 but not from locusts as the rest of the Deccan did. These causes of famine or distress are both insignificant and unusual compared with the chronic failure of the rains.

DRINKING WATER

The district is one of the arid portions of the Deccan and consists generally of dry crop land. The water-supply is, therefore, scanty especially in Karmala and Malsiras talukas. The average rainfall of the district is twenty-eight inches but is rarely timely and generally insufficient for water-supply. Failure of the rainfall even for one year necessitates arrangements for improving the water-supply. The chief drinking water-supply in rural areas consists of wells in villages except on the banks of the Bhima and the Sina. The irrigation tanks are useful both for drinking supply and irrigation purposes. The water-supply in the towns of Sholapur, Barsi and Pandharpur which have got their own water-works is fairly good. The Nira Right Bank Canal work in the district is still incomplete and will be useful for drinking as well as irrigation purposes in the western part of the district.

TRADE AND INDUSTRIES

The people generally live on agriculture. The only commercial centres are Sholapur and Barsi which are noted for their cotton and yarn trade. Among the great commercial centres in the Presidency, Sholapur stands third and is noted for its 'mill' industry. Barsi, Kurduwadi and Karmala have also got various ginning and pressing factories but the business is seasonal and flourishing when there is a good cotton crop. There is also one cotton mill at Barsi and more are likely to spring up in the near future. Hand loom industry is also in existence to a great extent in Sholapur and to some extent at Walsang and Tikekarwadi where '*lugdis*' are manufactured. Besides cotton, the chief exports are oil, oil-seeds, *ghi*, turmeric and cotton cloth.

The imports are salt, piece-goods, yarn, gunny bags, and iron-ware. The largest centres of internal trade are Sholapur city, Barsi and Pandharpur. The traders are chiefly Lingayats, Bhatias, Hindu Vanis and Marwadis.

COMMUNICATIONS

The district is traversed by the G.I.P. Railway; by a small length of the Madras and Southern Maratha Railway which joins the former at Hotgi; and by the Barsi Light Railway which joins Kurduwadi on the G.I.P. Railway with Latur in H.E.H. the Nizam's Dominions sixty miles off and with Pandharpur thirty-one miles off. Further extension of twenty-four miles to Sangola and thence to Miraj is under contemplation, the earth work for which has been already done up to Sangola by famine labour. Some head-quarter towns of talukas like Sangola and Malsiras still lie at some considerable distance from the railway line—Sangola lying twenty miles off and Malsiras about thirty-two miles.

In other means of communication the district is specially favoured. The pilgrim roads radiate in all directions from Pandharpur and there is not much difficulty in traversing the district in the wettest weather. In times of drought the roads are passable by carts, especially from such railway centres as the Barsi Road and Sholapur stations. The Bhima river is, however, a great obstacle to cart traffic, cutting off the south-west portion of the district from the railway. This portion will always require especially careful attention during a famine. There are ferries but no bridges over this river within the limits of the district, except the causeway recently built at the entrance of Pandharpur town. Construction of causeways over the Bhima and the Sina is however under contemplation, and materialisation of the scheme will greatly enhance the communication facilities of the district.

RELIGION

The population of the district according to the census of 1921 is 742,010 comprising 680,475 Hindus, 58,702 Musalmans, 2,502 Christians and 331 Parsis.

LANGUAGES

Marathi is the vernacular of seventy-eight per cent. of the people. Hindi (Hindusthani)-speakers amount to about eight per cent. and Kanarese to nearly seven per cent. and it may be noted that nearly a quarter of the population of Sholapur taluka speak this language. Kanarese is also spoken to a limited extent in Barsi and Sangola talukas but nowhere else. Telugu is the language of four per cent. of the population.

BROAD OCCUPATIONS

According to broad occupations 457,472 persons or nearly sixty-two per cent. are supported by Agriculture. Industry supports 129,861 persons or about eleven per cent. Trade and Transport 51,925 persons or seven per cent., the Professions and Liberal Arts 11,323 persons or one and a half per cent. while the remainder 91,429 persons or about twelve per cent. follow various occupations for their livelihood.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population mainly according to occupations and in a few cases only according to castes. The figures are based on the census of 1921 and include both workers and dependents.

Pasture and Agriculture.—Of the total population of 461,663 supported by pasture and agriculture the majority are ordinary cultivators (285,488). Farm servants and field-labourers 139,007 come next. 32,777 persons are dependent on income from rent of agricultural land. Herdsmen, shepherds, goatherds, etc., number 3,525. The cultivators are mostly Marathas, Kunbis, Malis and Kulwadis. Their condition is noticed under 'economic condition' further on.

Industry.—Under this head the textile industry stands first, supporting 71,700 persons who are weavers and other workers in cotton, wool and silk, etc., at home and in factories. Carpenters 6,274 and basket-makers and workers in canes and bamboos 1,684 chiefly constitute the wood industry. In the metal industry the most important are workers in iron 3,791 and those in brass and copper 565. Potters number 2,536. In the food industry manufacturers of vegetable oils 1,942, butchers 1,581, and grain parchers 164 deserve a mention. Excavators and earth-workers 2,799, stone-cutters and dressers 4,510, bricklayers and masons 4,292 mainly account for the building industry. The other classes falling under this head are the shoe-makers 8,555, barbers 4,751, tailors 2,896 and washermen 2,502.

In villages, though many of the above depend upon the prosperity of cultivators, some of them have a considerable reserve of means and they get sufficient work and fair wages generally. Many also manage to get employment outside the district. Most of the classes noted above are in a fair condition.

Trade.—The trade in food-stuffs is by far the most important—supporting as many as 18,673 persons. Grocers and sellers of oil, salt, condiments and spices, etc., 11,286, grain and pulse dealers 3,879, sellers of milk, butter, poultry, etc., 1,918 and dealers in hay, grass and fodder 227 make up the sum total under this sub-head. The trade in fuel such as firewood, cowdung cakes, etc., is also comparatively important supporting 2,009 persons. Lingayats are the chief caste of traders. They are grocers and brokers and are fairly off. Next to Lingayats come the Marwadis, Gujars, Komtis and Mahomedans. Traders as a class are generally secure.

Professional Beggars (11,418).—In times of famines particularly, the condition of many of them is insecure but owing to their migratory habit, few of them would need relief.

Depressed Classes.—Mangs 30,833, Mahars 66,702, Chambhars 17,056 and Bhangis 310 mostly constitute these classes. The Chambhars who are leather workers and Bhangis, some of whom get employed as scavengers in Municipal towns, get fair wages. Some of these, however, as also of the Mangs and Mahars may require State help in acute distress.

Brahmans (27,916) are mostly priests, land-holders, Government servants, etc., and are quite secure.

Musalmans (58,702).—Most of these live in the principal towns of the district. The town Musalmans are mostly traders and craftsmen and on the whole fairly off; the village Musalmans are, however, generally poor.

Christians (2,502) and *Parsis* (331) are very few in number. No special remark is requisite.

ECONOMIC CONDITION

The population is almost purely agricultural. Weaving is the only important industry and is in good condition. An improved pattern of hand-loom is manufactured at Tikekarwadi by one Mr. Tikekar who is going to start a weaving school also at that place.

The Weavers' Guild at Sholapur, organised for improving the condition of weavers, was wound up in 1919. Seven Weavers' Co-operative Societies have since been established at different places in the district, namely, at Sholapur, Angar, Begampur, Karkamb, Madha, Sangola and Tembhurni.

At Sholapur the Mill industry is well established and there are five steam spinning and weaving mills and one spinning mill. There is also one spinning

and weaving mill at Barsi. Sholapur, Pandharpur and Barsi are the important trade centres. The importance of Pandharpur rests on its necessities as a place of pilgrimage. There are two European Firms established at Barsi and there are steam presses there. The extension of Barsi Light Railway to Latur in H. E. H. the Nizam's Dominions has somewhat decreased the importance of Barsi town. Erection of two mills at Barsi and one more at Sholapur is under contemplation. Since the out-break of the Great War this industry attained considerable prosperity and has immensely improved the condition of the labour class in general. In the district, Valsang is an important weaving and dyeing centre and a hand-loom and metal-work factory is in operation at Tikekarwadi. Silks and finer sorts of cotton cloth such as '*dhotis*' and women's '*saris*' prepared in Sholapur bear a good name. Blankets which are woven in large numbers, and leather goods, shoes, and brass-ware are also industries worth mention.

The precarious rainfall of the whole district places the population in an inferior condition to that of other Deccan districts, and the hazardous uncertainty of the seasons discourages the cultivators from enterprise and the practice of good tillage or regular rotations. The continuous uncertainty of rains has compelled the agriculturists to leave their villages for employment in Mills or other industries near by. The district is still over-run with Marwadis and Gujarathi money-lenders attracted by the fluctuations of the seasons which encourage the improvidence of the cultivator, who, however, readily repays the usurer in the alternations of bumper harvests. The low rates of the Government assessment which average less than nine annas an acre add a further inducement. The residents who join the ranks of the money-lenders cannot hold their own against the keen unscrupulous Marwadi who is nowhere in the Deccan seen to worse advantage than in this district. A considerable change has, however, been brought about in this respect by the establishment of several co-operative Banks who lend money at moderate rates to the agriculturists who are members of co-operative Societies. There are two Banks, one at Sholapur and the other at Barsi and a branch at Pandharpur.

Irrigated land holds an exceedingly high value, and irrigation wells are recorded as having increased from fifteen thousand in 1886 to nearly twenty-one thousand in 1903 and to over twenty-three thousand in 1920-21. The effect of the increase in the number of wells in respect of famine protection must not, however, be over-estimated as in years of deficient rainfall many of them turn dry.

There has been a large reduction in agricultural stock, cattle having fallen from 466,000 in 1886 to 288,000 in 1903 and further to 172,000 in 1920. Goats also have decreased from 214,000 in 1903 to 115,000 in 1920. Horses and ponies alone have increased from 6,500 in 1903 to 7,500 in 1920.

The gross area under cultivation for the year 1905-06 was about 1,641,000 acres. It went on rising (except in 1913-14 when there was a slight fall of about two per cent. owing to famine) and reached the maximum of about 2,268 thousand acres in 1915-16 giving an increase of about thirty-eight per cent. over 1905-06 figure. Since then there was a gradual decrease especially in 1918-19 when it fell to about 1,800 thousand acres. Again it began steadily increasing and the figures for 1921-22 and 1922-23 were 2,219 and 2,189 thousand acres respectively.

The average area of a holding is 23·5 acres and the average assessment per acre is eight annas three pies.

Owing to the famine of 1876-77 the population of the district fell during the decade ending 1881 by nineteen per cent., the number decreasing from 720,203 in 1872 to 583,411 in 1881. A series of normal years followed, without any scarcities or wide-spread epidemics, and the population rose to 750,680 in 1891 or a rise of twenty-eight per cent. on the population of 1881. Owing to famine and plague the district lost four per cent. in the next decade and the population was reduced to 720,988 in 1901. The population of 1911 showed an increase of about six and a half per cent. on that of 1901 but owing to the epidemic of Influenza and severe famine in 1918 the population of the district again went down by nearly three and a half per cent., the number decreasing from 768,330 in 1911 to 742,010 in 1921. It will thus be seen that the population of the district fluctuates considerably from decade to decade.

MIGRATION

A succession of bad years has brought home to the cultivators the necessity of migrating at the right time in search of labour. A considerable amount of labour is absorbed in the spinning and weaving mills and cotton presses in the district. A large number of labourers also migrate in times of scarcity to the adjoining territory of H. E. H. the Nizam if conditions are more favourable there, or to Berars and Bombay. Some find employment in the Tata Works or elsewhere in the Poona district. Before the commencement of work on the Nira Right Bank Canal especially, people from Pandharpur, Sangola, Malsiras and Karmala talukas in particular used to go to the places noted above in large numbers to seek employment in years of famine. Since then, this migration has decreased though a considerable number of people still regularly migrate to other places in search of casual labour. These, however, generally return to their homes immediately after the early monsoon sets in.

FORMER FAMINES

In the season of **1876** the failure was nearly general, but the unseasonableness of the rain was as conspicuous as its deficiency. For instance, in Pandharpur, out of a total of eight inches, four inches and a half fell in June.

In **1896** the rainfall after August at Sholapur amounted to only 7·29 inches, of which 6·76 fell in November. In other parts of the district there was practically no rain from August onwards. The outturn of crops was only nine per cent. of the average.

In **1899** there was little rainfall till the end of August. In September, there were heavy rains all over the district, but the fall was almost nil for the rest of the year, and the result was the worst famine of the century. The crop outturn was nine per cent. of the normal. In this year, however, the storage reservoirs were filled by a single storm, and the area (about twenty thousand acres) under Canal irrigation was double the area of the previous year.

In **1900** the late rains were again deficient and the distress was as intense as in the previous year, except in the Barsi and Sholapur talukas. The outturn, compared with a normal year, was seventeen per cent.

In **1901** the rains, both early and late, failed in the Sangola and Malsiras talukas, and relief measures continued, but on a much reduced scale, till November 1902, when a prosperous harvest was secured throughout the district.

In **1905** the *kharif* and *rabi* crops were a total failure except the *rabi* only in a small portion of two talukas. The rainfall was throughout scanty, *i.e.*, less than half and even in places one-third of the normal.

The year **1907-08** was a bad one all over the district except for Sholapur and Barsi talukas. Sangola fared worst, receiving only seven inches and a half of rain in the year. The rains were neither sufficient nor well distributed and the outturn of both the *kharif* and *rabi* was far below normal.

In **1911** the rains were only forty per cent. of the normal throughout the district and even less in places. The early rains were comparatively better but the late rains on which the district depends so much, were scanty and unseasonable. As a result there was a widespread failure of crops in almost the whole of the district.

The rainfall was far below the average again in **1912** throughout the district. Malsiras fared worst receiving only six inches of rain. The *kharif* and *rabi* crops both gave but a poor yield in many parts of the district.

In **1913** the rainfall was little more than half the normal throughout the district. The effect of the deficiency was aggravated by bad distribution. The *kharif* rains started well generally but the protracted drought in August ruined the prospects of the season and *kharif* crops were gone. The September rains were very fitful and scanty in all talukas and the *rabi* sowings were a failure everywhere in the district except in Barsi taluka. Besides food there was a great deficiency of fodder too. To meet the demand of fodder about eighty-six lakhs of pounds of baled grass were imported.

The year **1918-19** was the worst during the last two decades. In this year, the *kharif* and *rabi* rains were both deficient and unseasonable, and vast areas remained fallow. To add to the difficulty the Influenza epidemic was in full swing when agricultural operations ought to have been undertaken. This, combined with the conditions arising out of the Great War considerably aggravated the existing distress. The fodder famine was perhaps more acute than that of food. Considerable quantity of grass was imported and a cattle kitchen opened in Sangola taluka. Large quantities of wheat and rice were imported to replenish the stock of food grains in the district. Grain dole was given to the infirm and destitute. Suspensions and remissions and *tagai* advances were given on a liberal scale. No relief works could be opened as the wages offered on these works according to the Famine Relief Code did not attract labourers.

In **1920-21** both the *kharif* and *rabi* rains were deficient and ill-distributed; and brought about an almost total failure of the crops in Madha, Karmala and Malsiras talukas and a partial failure elsewhere. Almost the whole district except Barsi was more or less affected. As in the previous famine of 1918-19 considerable quantity of grass was imported, cattle kitchens were opened in places and grain dole granted to the infirm and the destitute. Minor P. W. D. works and Mangi Tank work were opened to give labour on ordinary wages to a large number of people in Karmala and Malsiras talukas.

The failure of the early monsoon rain is comparatively unimportant in the district, except in Sangola and Malsiras talukas. A heavy fall in August, followed by a break for sowing the *rabi* crops, with good showers in September and October is necessary. A failure of this rain means loss of the *jowari* crop on which men and cattle depend.

The work of Nira Right Bank Canal played an important part during the recent famines in providing work on ordinary wages to the needy and did much to prevent emigration in search of labour. The artisans and labouring classes were able to get on well in these famines. The peculiar feature of these recent famines was that the usual conditions attending a year of famine or scarcity such as increase in the number of beggars, emaciation by starvation, increase in the number of petty thefts, etc., were altogether absent. Famine wages according to the Famine Relief Code no longer attracted the people and no relief works on famine wages could be opened. Expansion of ordinary works was found to be both economical and an adequate measure of famine relief. Liberal grants of *tagai* and works on ordinary wages enabled the people to tide over the years of scarcity.

When the water in the Nira Right Bank Canal becomes available for issue the situation of Malsiras and Sangola talukas will undergo a very favourable change and the constant fear of famine or scarcity in these areas will be a thing of the past.

FORECAST OF RELIEF WORKERS

Considering the situation in the light of the experience gained during the very recent famines and other factors such as development of industries and irrigation, it may not be far off the mark, if we say that it will be mostly the decrepit and the destitute who will need relief in future famines. The number of such persons will hardly exceed a few thousands.

SHOLAPUR.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Population (1921). Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Area cultivated. Cropped (Net). Not irrigated.	Area cultivated. Fallow.	Area cultivated. Total.	Area uncultivated. Available for cultivation.	Area uncultivated. Not available for cultivation. Forest.	Area uncultivated. Not available for cultivation. Other.	Area uncultivated. Total.
								No.	No.	Rs.	No.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Sholapur ..	148	840	4	8	152	848	254,461	276	2,92,533	152	542,962	100 0	7,683	430,470	40,696	478,809	1,389	23,314	39,450	64,153
2	Barsi ..	118	565	5	32	123	597	152,849	223	2,20,860	123	381,950	100 0	817	320,585	5,574	343,454	311	7,274	30,911	38,496
3	Madha ..	85	596	4	23	89	619	88,997	144	1,77,854	89	396,316	100 0	22,135	275,954	53,933	351,022	3,122	9,322	33,850	45,294
4	Karmala ..	112	698	11	74	123	772	69,214	90	1,71,068	123	401,920	100 0	9,508	322,110	68,592	404,282	5,628	26,326	57,564	89,518
5	Pandharpur ..	78	434	8	44	86	478	87,609	183	1,45,033	86	306,097	100 0	14,405	225,196	36,406	276,007	791	4,835	24,464	30,090
6	Sangola ..	71	622	6	46	77	668	77,840	116	1,07,394	77	427,661	100 0	18,146	245,415	107,743	371,304	1,414	20,932	34,011	56,357
7	Mahsras ..	57	486	12	88	69	574	50,920	89	1,35,983	69	367,324	100 0	8,522	227,964	63,363	300,049	3,794	20,326	43,155	67,275
	Total ..	669	4,241	50	315	719	4,556	742,010	163	12,52,713	719	2,916,110	100 0	96,846	2,052,614	375,467	2,524,927	16,449	112,329	262,405	391,183

No.	Taluka.	Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	As.	As.	Acs.	As.	As.	Acs.	As.	Acs.	As.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Sholapur ..	677	..	..	7,003	3	7,683	115	1,059	33	3,129	..	331	72	580	1,630	34	1,420	8,397	714	7,683
2	Barsi ..	215	5	..	17,375	..	17,595	412	1,661	45	9,339	..	417	866	214	3,515	422	1,755	18,662	1,287	17,375
3	Madha ..	101	..	..	22,034	..	22,135	168	2,536	84	13,000	782	2,788	1,100	169	1,739	1,197	3,428	26,941	4,806	22,135
4	Karmala ..	545	..	..	8,580	..	9,125	1,568	..	59	5,734	397	455	308	123	299	92	980	10,223	1,663	8,560
5	Pandharpur ..	..	9	..	7,954	..	7,963	2,000	100	7,305	2,530	1,200	..	..	83	1,500	32	1,200	16,000	1,695	14,305
6	Sangola ..	2,499	..	..	15,642	..	18,146	217	1,478	681	8,828	3,182	1,955	692	160	3,047	169	1,507	23,117	4,971	18,146
7	Mahsras ..	..	..	..	8,522	..	8,522	26	1,881	30	2,933	1,582	895	260	14	1,011	81	2,156	10,629	2,107	8,522
	Total ..	4,037	14	..	86,354	3	90,846	4,136	14,167	1,030	50,262	6,051	6,151	3,327	1,242	13,211	2,027	12,515	114,119	17,273	96,846

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Population (1911). Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Area cultivated. Cropped (Net). Not irrigated.	Area cultivated. Fallow.	Area cultivated. Total.	Area uncultivated. Available for cultivation.	Area uncultivated. Not available for cultivation. Forest.	Area uncultivated. Not available for cultivation. Other.	Area uncultivated. Total.
								No.	No	Rs.	No.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Sholapur ..	148	840	4	8 152	848	189,616	223	290,459	152	542,958	100 0	10,789	402,855	65,462	479,104	1,368	23,572	38,914	63,854
2	Barsi ..	118	565	5	32 123	597	152,825	222	220,772	125	381,935	100 0	20,928	317,942	4,456	343,326	298	90,853	30,853	98,609
3	Madha ..	85	596	4	23 89	619	101,096	163	176,677	89	396,300	100 0	22,241	259,823	69,375	351,491	2,514	9,148	32,947	44,809
4	Karmala ..	112	698	11	74 123	772	93,746	121	166,686	123	493,798	100 0	10,715	245,067	148,494	404,276	4,772	25,887	58,868	89,522
5	Pandharpur ..	78	434	8	44 86	478	101,284	212	144,172	86	306,050	100 0	17,647	201,540	55,558	274,745	802	6,163	24,340	31,305
6	Sangola ..	71	638	6	38 77	668	82,816	129	107,184	77	427,661	100 0	59,222	109,170	200,823	370,215	1,995	21,976	33,470	57,441
7	Mahsras ..	57	486	12	88 69	574	67,747	118	106,298	69	367,324	100 0	16,285	175,075	110,242	301,602	3,598	19,658	42,466	65,722
	Total ..	669	4,249	50	307 719	4,556	768,330	168	1,212,643	719	2,916,026	100 0	157,827	1,711,522	655,410	2,524,759	15,347	114,062	261,858	391,267

No.	Taluka.	Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Sholapur ..	4,048	..	..	6,719	21	10,789	1,373	..	..	..	..	..	..	..	..	..	..	Se-	11,888	1,099	10,789
2	Barsi ..	1,718	..	98	16,967	145	20,928	1,967	..	Tal	ukwar	Details	..	not	a	vaila	ble.	..	parate	21,928	1,000	20,928
3	Madha ..	..	650	21	21,591	..	22,241	4,221	..	..	..	..	..	..	..	..	..	..	figures not	27,639	5,398	22,241
4	Karmala ..	242	..	..	10,473	..	10,715	1,802	..	..	..	..	..	..	..	..	..	..	available.	12,479	1,764	10,715
5	Pandharpur ..	176	..	..	9,289	..	17,647	2,073	..	..	..	..	..	..	..	..	..	..	..	20,440	1,793	17,647
6	Sangola ..	..	..	..	47,865	..	59,222	2,882	..	..	..	..	..	..	..	..	..	..	..	77,017	7,795	59,222
7	Mahsras ..	..	..	..	16,285	..	16,285	1,805	..	..	..	..	..	..	..	..	..	..	..	21,149	4,864	16,285
	Total ..	6,184	650	119	129,189	166	157,827	20,323	106	14,167	1,030	50,262	6,051	9,151	3,327	1,242	13,211	2,027	12,515	179,559	22,713	156,846

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.	Oil Seeds. Sesamu.	Linseed.	Groundnut.	Safflower-seed.	Niger-seed.	Others.	Total.	Fibres. Dyes.	Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped.	Remainder cropped.
		Acs	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Sholapur ..	340,969	18,647	516	6,165	331	335	367,263	13,270	80,78	72	4,595	51	26,056	1,323	235	191	1,749	294	38	332	1,113	560	231	2,411	7,347	11,406	...	679	22,074	..	6,712	4,506	11,223	9,994	439,474	1,321	438,153
2	Barsi ..	178,527	10,802	1,808	5,179	642	2,634	199,387	17,476	6,676	4,518	4,479	328	33,476	772	45	206	1,023	300	84	384	1,713	214	1,788	2,635	32,817	2,050	...	1,639	40,939	..	8,169	3,988	12,091	55,779	345,006	7,126	337,880
3	Madha ..	243,506	7,760	403	3,592	2,738	613	257,472	500	4,772	3,161	955	..	9,077	2,204	531	182	2,917	247	..	247	1,580	169	220	2,199	1,787	19,694	...	175	24,075	..	2,566	897	3,463	2,968	303,978	5,889	298,089
4	Karmala ..	219,733	22,160	145	2,573	786	713	246,112	3,284	7,602	1,096	4,805	94	16,821	1,494	170	174	1,838	185	27	212	644	221	1,468	3,431	1,771	36,536	...	323	43,521	..	28,351	2,214	30,565	598	340,293	4,603	335,690
5	Pandharpur ..	199,215	10,855	180	2,846	1,418	253	214,769	1,737	6,066	340	148	..	8,291	1,669	289	811	2,938	79	679	879	811	1,564	..	1,085	12,428	..	57	17,592	..	1,252	591	1,843	113	242,951	3,896	239,581
6	Sangola ..	147,455	24,994	739	4,968	2,935	1,432	232,543	603	3,408	573	1,142	..	5,730	9,969	4,076	140	13,821	176	..	176	1,385	160	952	2,528	1,155	14,572	...	151	19,158	..	813	927	1,740	1,813	275,176	11,615	263,561
7	Mahsras ..	171,700	23,086	91	2,103	855	293	198,128	835	2,937	228	952	7	4,939	3,595	1,311	61	4,967	92	..	92	929	14	187	263	461	23,705	...	66	24,682	..	3,749	147	3,896	5,711	243,357	6,866	236,486
	Total ..	1,500,102	168,326	4,178	27,428	9,525	6,113	1,715,668	36,343	38,179	6,968	16,556	479	98,525	20,713	7,157	1,035	25,985	1,373	149	1,522	8,039	1,222	5,000	16,631	46,944	120,401	...	3,070	192,046	..	56,531	12,182	68,713	75,136	2,189,778	40,316	2,149,460

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetables and Fruits.	Green Fodder.	Fruit trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.	Oil Seeds. Sesamu.	Linseed.	Safflower-seed.	Niger-seed.	Ground-nut.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped.	Remainder cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Ac.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Sholapur ..	321,692	14,801	4,697	4,952	740	126	34,008	10,685	6,503	102	542	..	17,922	1,495	400	1,895	252	55	310	1,663	799	206	1,696	2,590	..	5,402	10,232	20,126	..	9,947	2,659	12,606	13,039	415,368	1,726	413,642
2	Barsi ..	201,014	4,619	3,197	5,962	766	1,535	216,793	10,037	7,500	2,121	2,337	322	22,317	1,005	175	1,178	212	135	347	2,602	683	780	3,190	1,881	..	12,312	2,697	20,857	..	3,111	2,178	5,289	71,553	341,614	6,744	334,870
3	Madha ..	222,373	9,182	1,386	3,258	4,968	335	239,502	1,386	5,032	255	294	..	6,974	2,271	387	2,658	227	27	254	2,014	636	388	1,525	20,387	..	2,874	451	25,825	..	7,124	549	7,673	3,913	289,749	6,633	282,116
4	Karmala ..	188,443	5,090	542	3,471	2,262	492	200,309	1,751	6,066	413	2,375	..	10,605	1,522	283	1,805	174	40	214	1,297	191	150	970	23,068	..	1,023	603	26,371	..	13,908	505	14,413	4,611	257,551	5,759	251,792
5	Pandharpur ..	186,286	5,620	723	2,302	2,084	358	197,373	839	3,592	206	27	..	4,664	1,073	368	1,441	145	..	145	1,085	438	153	433	11,266	..	2,745	94	14,491	..	2,782	95	2,877	31	222,175	2,908	219,187
6	Sangola ..	98,594	15,309	278	2,852	10,778	39,218	167,058	1,922	2,262	636	925	..	5,747	2,143	2	2,145	124	..	124	1,185	136	228	626	3,693	..	1,449	415	6,458	..	1,242	1,153	2,395	747	186,187	17,795	168,392
7	Mahsras ..	148,547	10,827	125	1,859	2,530	1,536	165,424	91	1,105	34	129	20	1,379	2,258	131	2,389	29	..	29	1,168	219	17	56	17,017	..	318	24	17,437	..	752	49	801	7,695	196,441	5,081	191,360
	Total ..	1,366,949	61,439	10,948	26,386	24,128	43,605	1,533,455	26,691	32,150	3,767	6,659	409	69,676	11,965	1,945	13,910	1,163	260	1,423	11,006	3,102	2,322	8,536	80,101	..	25,523	14,378	130,860	..	38,866	7,188	46,054	98,599	1,908,085	38,736	1,869,349

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	Ploughs.	Carts.	Cattle. For Breeding. Bulls.	Bullocks.	For other purposes. Bullocks.	Milch-Cattle. Cows.	Young Stock. Calves.	Bullocks.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. For produce and goods.	Carts. For passengers.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Sholapur ..	33,707	836	265	82	1,800	438	17,986	8,662	21,453	7,687	92,910	1,506	19,053	47,628	1,180	1,758
2	Barsi ..	36,609	692	122	398	1,210	541	22,042	6,290	24,330	5,471	97,345	1,858	14,000	37,141	1,544	1,464
3	Madha ..	24,625	901	85	211	721	708	13,018	3,267	15,291	3,579	58,981	728	19,734	38,505	614	1,403
4	Karmala ..	30,625	513	69	41	732	197	18,456	2,543	20,282	2,359	76,114	1,209	19,580	42,827	909	1,780
5	Pandharpur ..	14,562	255	41	34	689	230	10,624	3,041	11,215	2,412	43,110	566	15,642	35,151	607	958
6	Sangola ..	17,955	578	24	16	424	99	16,014	2,580	15,331	2,170	53,901	725	58,274	36,470	2,572	1,517
7	Mahsras ..	15,778	153	58	25	165	113	9,647	1,623	8,462	1,664	37,658	767	42,210	31,855	..	1,765
	Total ..	173,867	3,622	664	257	5,241	1,888	107,759	28,431	111,652	25,138	458,519	7,414	188,493	269,977	6,014	10,644

No.	Taluka.	Cattle. For Ploughs. Oxen.	Ploughs.	Carts.	Cattle. For Breeding. Bulls.	Bullocks.	For other purposes. Bullocks.	Milch-Cattle. Cows.	Young Stock. Calves.	Bullocks.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. For produce and goods.	Carts. For passengers.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Sholapur ..	30,127	542	453	914	4,698	305	15,021	8,338	16,638	5,749	87,956	1,643	15,666	22,891	1,108	1,624
2	Barsi ..	31,926	419	71	97	973	332	15,974	6,061	15,694	4,522	75,673	1,603	8,828	15,068	1,323	906
3	Madha ..	25,222	427	126	362	922	256	14,874	4,074	16,362	3,402	64,566	911	20,827	19,815	574	1,145
4	Karmala ..	27,910	224	53	61	414	175	16,537	2,988	18,820	2,186	69,399	1,300	17,353	17,591	752	1,332
5	Pandharpur ..	13,819	198	26	50	383	151	8,931	3,077	10,303	2,627	39,364	819	17,462	15,722	670	895
6	Sangola ..	18,302	277	101	21	210	110	17,472	2,685	11,792	3,176	80,299	790	52,767	13,085	2,329	1,642
7	Mahsras ..	15,337	140	24	19	59	62	9,185	1,729	8,580	2,097	37,232	562	39,434	11,197	777	821
	Total ..	173,643	2,227	854	1,524	7,659	1,391	93,197	28,952	98,464	23,709	418,979	7,495	172,311	115,474	7,321	8,363

No.	Taluka.	Ploughs. For produce and goods.	Carts. Cropped land per pair of plough cattle.
		Small.	Large, i.e. of over 2 Cattle.
1	Sholapur ..	767	3,922
2	Barsi ..	309	3,207
3	Madha ..	320	2,121
4	Karmala ..	300	2,172
5	Pandharpur ..	167	1,838
6	Sangola ..	98	1,464
7	Mahsras ..	251	1,773
	Total ..	2,236	16,547

SHOLAPUR TABLES—II.

Water Supply—1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Sholapur	1	..	1	..	..	..	1,713	834	2,547	597	157	..	..	45	1	2	79
2	Barsi	2	..	..	..	..	4	2,259	2,289	4,548	659	120	..	1	26	39	63	21
3	Madha	1	..	..	..	..	..	2,956	2,049	5,105	535	216	..	1	24	..	1	28
4	Karmala	1	..	..	..	..	..	1,263	1,642	2,905	742	65	..	9	70	..	22	..
5	Pandharpur	2	..	..	..	..	..	1,000	1,194	2,194	247	34	2	..	11	..	2	..
6	Sangola	1	..	..	3	..	..	3,696	579	4,275	355	7	..	..	..	..	..	..
7	Malsiras	..	..	..	..	..	..	1,813	773	2,586	175	20	..	..	8	6	3	1
	Total ..	8	..	1	3	..	4	13,800	9,360	23,160	3,310	619	4	12	184	46	127	129

Government Protective Irrigation Works—1922-23.

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Ekruk Tank ..	17,151	16,941	16,941	16,941	1,524	...	1,524
2	Koregaon Tank ..	2,394	2,394	1,050	1,050	...	106	106
3	Ashti Tank ..	17,882	16,825	11,780	11,780	...	3,390	3,390
4	Pathri Tank ..	5,000	4,586	2,500	2,500	...	48	48
5	Mhaswad Tank ..	129,045*	106,214*	24,800*	24,800*	3,800	4,711	8,511
		* Inclusive of area in Satara.						
	.	171,472	146,960	57,071	57,071	5,324	8,255	13,579

Holdings—1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of Holding.	Assessment per Holding.	Assessment per Acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Sholapur ..	2,575	8,607	5,487	645	14	17,328	472,865	27·8	16 11 6	0 9 10
2	Barsi ..	3,006	7,172	5,439	578	18	14,014	335,771	23·9	11 5 6	0 10 3
3	Madha ..	3,177	7,770	3,879	343	1	15,120	337,382	22·3	11 9 2	0 8 4
4	Karmala ..	1,964	7,571	4,264	406	8	14,233	362,095	25·4	11 10 2	0 7 4
5	Pandharpur ..	1,083	6,641	2,397	206	9	12,533	250,376	19·9	11 3 5	0 11 3
6	Sangola ..	4,217	8,562	3,624	346	11	16,760	346,040	20·6	6 3 11	0 4 10
7	Malsiras ..	2,253	4,975	2,536	333	26	10,125	252,057	24·9	12 15 10	0 8 4
	Total ..	20,162	51,298	25,828	2,740	87	100,115	2,356,586	23·5	12 3 10	0 8 3

Incidence of Assessment—1920-21.

No.	Taluka.	Fully Assessed Area. Area.	Assessment.	Incidence per Acre.	Population.	Fully Assessed Area including Alienated Land in Government Villages. Incidence per Head of population including Alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Sholapur ..	415,593	2,75,920	0 10 8	233,372	1 6 0
2	Barsi ..	304,773	2,09,174	0 10 11	126,016	1 13 8
3	Madha ..	320,679	1,73,010	0 8 8	85,673	2 3 3
4	Karmala ..	338,898	1,61,632	0 7 5	65,142	2 12 10
5	Pandharpur ..	229,326	1,37,111	0 9 7	81,710	1 13 2
6	Sangola ..	310,390	1,01,556	0 5 5	72,682	1 11 3
7	Malsiras ..	212,227	1,25,106	0 9 3	43,995	3 5 6
	Total ..	2,131,886	11,83,509	0 8 10	708,590	2 2 6

Government Protective Irrigation Works—1918-19.

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Ekruk Tank ..	17,152	16,941	16,941	16,941	2,330	2,474	4,804
2	Koregaon Tank ..	2,394	2,394	1,050	1,050	163	87	250
3	Ashti Tank ..	17,882	16,825	11,780	11,780	1,540	4,098	5,638
4	Pathri Tank ..	5,000	4,586	2,500	2,500	364	1,075	1,436
5	Mhaswad Tank ..	129,045*	106,214*	24,800*	24,800*	4,571	4,464	9,055
		* Inclusive of area in Satara.						
	Total ..	171,473	146,960	57,071	57,071	8,965	12,218	21,183

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1	Sholapur	Maximum 1878 ..	..	..	..	1·25	0·39	4·19	9·83	19·02	19·77	12·59	0·99	..	68·03
		Minimum 1876 ..	..	..	1·52	0·24	..	2·05	2·36	3·60	0·54	0·26	..	..	10·27
		Average ..	0·15	0·07	0·20	0·46	..	4·67	4·20	4·54	7·71	3·02	1·05	0·46	27·55
		Rainfall for 1922-23 ..	..	0·67	0·46	0·04	0·31	7·54	5·66	0·38	0·47	0·51	3·10	..	17·14
2	Barsi	Maximum 1892 ..	..	..	..	0·98	2·04	9·17	4·05	18·52	11·95	8·35	1·11	..	56·17
		Minimum 1905 ..	..	..	..	0·20	0·10	3·30	1·54	3·27	1·74	1·17	..	..	11·22
		Average ..	0·13	0·10	0·20	0·39	0·99	5·05	4·64	4·76	8·26	2·98	0·88	0·50	28·88
		Rainfall for 1922-23 ..	0·40	..	1·88	0·03	..	6·12	3·55	0·70	2·70	1·10	2·19	..	18·47
3	Madha	Maximum 1892 ..	..	..	..	0·41	2·13	8·05	5·32	13·57	9·84	11·54	0·74	..	51·60
		Minimum 1876 ..	..	..	..	..	..	0·7	1·07	1·72	..	..	..	..	3·50
		Average ..	0·21	0·11	0·14	0·41	0·92	4·52	3·59	3·94	7·04	3·16	0·76	0·40	26·90
		Rainfall for 1922-23 ..	..	0·06	1·23	0·38	..	1·96	2·18	0·06	1·91	2·47	4·27	..	14·52
4	Karmala	Maximum 1889 ..	..	..	..	0·04	0·89	0·07	2·42	6·59	1·19	16·62	8·30	..	36·12
		Minimum 1876 ..	..	..	..	..	..	..	0·79	1·00	0·74	0·34	..	..	2·23
		Average ..	0·12	0·10	0·20	0·29	0·98	4·06	3·13	3·03	6·92	2·71	0·98	0·37	22·83
		Rainfall for 1922-23 ..	0·11	..	1·89	0·16	..	3·70	2·57	..	1·22	1·25	9·36	..	20·26
5	Pandharpur	Maximum 1916 ..	..	..	..	..	2·38	1·76	7·88	3·93	11·42	9·11	2·87	..	39·35
		Minimum 1876 ..	..	..	1·17	..	0·08	4·52	0·86	1·12	0·26	..	0·11	..	8·12
		Average ..	0·12	0·10	0·18	0·52	0·91	4·12	3·14	3·21	7·36	3·76	0·91	0·33	25·09
		Rainfall for 1922-23 ..	..	..	1·16	..	0·26	2·45	2·36	0·88	1·02	2·05	8·64	..	18·82
6	Sangola	Maximum 1892 ..	..	..	..	0·33	1·35	5·52	1·66	10·12	12·68	6·86	0·92	..	39·44
		Minimum 1876 ..	..	..	..	..	..	..	0·11	1·02	1·07	0·08	..	..	2·23
		Average ..	0·11	0·05	0·15	0·40	1·23	3·45	2·24	2·78	6·53	3·24	1·14	0·33	21·65
		Rainfall for 1922-23 ..	0·01	..	0·98	0·83	0·90	3·93	1·99	0·82	1·37	2·04	10·69	..	23·56
7	Malsiras	Maximum 1916 ..	..	..	..	0·82	2·51	0·38	18·42	0·27	7·37	9·10	2·90	..	41·77
		Minimum 1876 ..	..	..	..	..	1·30	3·83	1·67	3·72	3·44	9·94	0·27	..	25·26
		Average ..	0·16	0·14	0·10	0·43	1·16	2·75	2·78	2·93	5·26	7·01	0·90	0·46	20·18
		Rainfall for 1922-23 ..	..	0·07	1·51	..	..	6·02	1·69	0·32	1·51	2·91	14·90	..	28·93
8	Akluj D.	Maximum 1903 ..	2·27	..	..	0·66	2·90	3·11	5·74	4·20	5·97	5·33	0·41	..	30·59
		Minimum 1918 ..	0·09	..	..	..	1·60	0·34	0·19	0·25	2·07	0·86	1·88	..	7·31
		Average ..	0·19	0·03	0·03	0·30	0·96	2·85	2·21	2·13	5·27	2·07	0·90	0·55	17·59
		Rainfall for 1922-23 ..	..	..	..	0·45	..	4·38	1·64	0·71	2·84	1·71	7·19	..	19·74

Temperature Details (Sholapur).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		F.	F.	F.	F.	F.	F.	F.	F.	F.	F.	F.	F.
1913	Mean maximum ..	86	92	99	103	103	94	88	90	92	93	89	87
	,, minimum ..	56	66	67	76	75	73	72	71	72	69	63	61
	Absolute maximum ..	91	98	105	108	109	104	95	94	92	98	92	90
	,, minimum ..	51	61	59	67	67	69	70	65	69	63	57	55
1914	Mean maximum ..	86	94	99	102	106	95	88	88	92	86	86	84
	,, minimum ..	59	65	68	74	78	73	71	71	71	68	63	61
	Absolute maximum ..	89	98	103	108	110	106	98	98	92	94	92	88
	,, minimum ..	55	57	61	68	74	68	65	68	66	61	56	48
1915	Mean maximum ..	84	91	95	102	104	98	89	89	88	88	88	83
	,, minimum ..	61	63	69	76	76	77	76	72	71	71	67	57
	Absolute maximum ..	88	95	103	106	109	110	96	95	94	96	96	86
	,, minimum ..	56	53	60	70	71	64	68	69	68	61	61	51
1916	Mean maximum ..	86	91	99	104	104	92	87	87	87	88	83	83
	,, minimum ..	62	62	68	75	77	72	71	70	70	70	66	59
	Absolute maximum ..	90	97	103	107	108	96	97	93	95	94	87	86
	,, minimum ..	53	57	60	68	66	70	68	69	68	67	58	49
1917	Mean maximum ..	85	89	96	100	98	90	91	88	85	86	85	84
	,, minimum ..	59	62	67	72	73	72	71	71	70	69	63	58
	Absolute maximum ..	89	95	98	104	102	99	97	94	90	90	89	87
	,, minimum ..	53	53	58	67	65	68	69	68	67	67	63	51
1918	Mean maximum ..	84	90	97	103	99	94	94	89	90	95	90	86
	,, minimum ..	62	63	68	74	74	71	70	70	70	68	68	62
	Absolute maximum ..	87	97	101	102	108	97	99	93	93	97	93	89
	,, minimum ..	51	57	65	67	69	69	67	68	64	64	58	51
1919	Mean maximum ..	88	94	99	103	104	91	91	90	89	90	88	85
	,, minimum ..	63	65	70	75	77	72	72	71	70	69	67	59
	Absolute maximum ..	90	97	103	106	107	103	96	93	95	96	95	89
	,, minimum ..	57	53	62	67	73	66	68	68	67	64	58	51
1920	Mean maximum ..	86	92	100	103	103	95	92	91	91	93	90	89
	,, minimum ..	63	62	69	76	75	72	70	71	71	71	65	57
	Absolute maximum ..	90	98	102	106	105	102	97	95	96	97	92	92
	,, minimum ..	56	54	59	67	65	69	66	68	67	67	55	52
1921	Mean maximum ..	90	93	102	103	102	95	88	88	90	84	84	84
	,, minimum ..	60	61	70	76	76	74	72	71	70	67	60	58
	Absolute maximum ..	93	97	106	109	110	105	92	90	91	91	91	87
	,, minimum ..	59	55	58	70	68	70	68	68	66	59	54	49
1922	Mean maximum ..	86	91	99	..	106	93	86	90	92	93	85	84
	,, minimum ..	61	63	69	..	72	72	71	71	71	69	65	56
	Absolute maximum ..	89	97	103	..	110	101	94	96	95	97	92	90
	,, minimum ..	56	53	59	..	74	63	68	69	68	60	51	47

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Gur. Turbat.	Gur. Jowari Bajri.	Gur. Dates.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Sholapur ..	32	30	17	18	80	91	0 11 4	0 6 2	0 4 10
	Not-headquarter towns.									
2	Barsi ..	33	29	17	19	128	167	0 13 0	0 4 9	0 4 7
3	Madha ..	32	31	15	18	107	...	0 9 0	0 3 10	0 3 8
4	Karmala ..	31	28	13	17	43	142	0 8 7	0 3 9	0 3 2
5	Pandharpur ..	33	29	17	19	98	...	0 5 8	0 5 0	0 3 10
6	Sangola ..	31	29	16	17	65	...	0 6 3	0 2 11	0 3 4
7	Malsiras ..	30	28	15	17	56	...	0 8 2	0 3 1	0 3 3
	Average of the non-headquarter towns ..	32	29	15	18	84	154	0 8 5	0 3 11	0 3 4

Prices—1922-23.

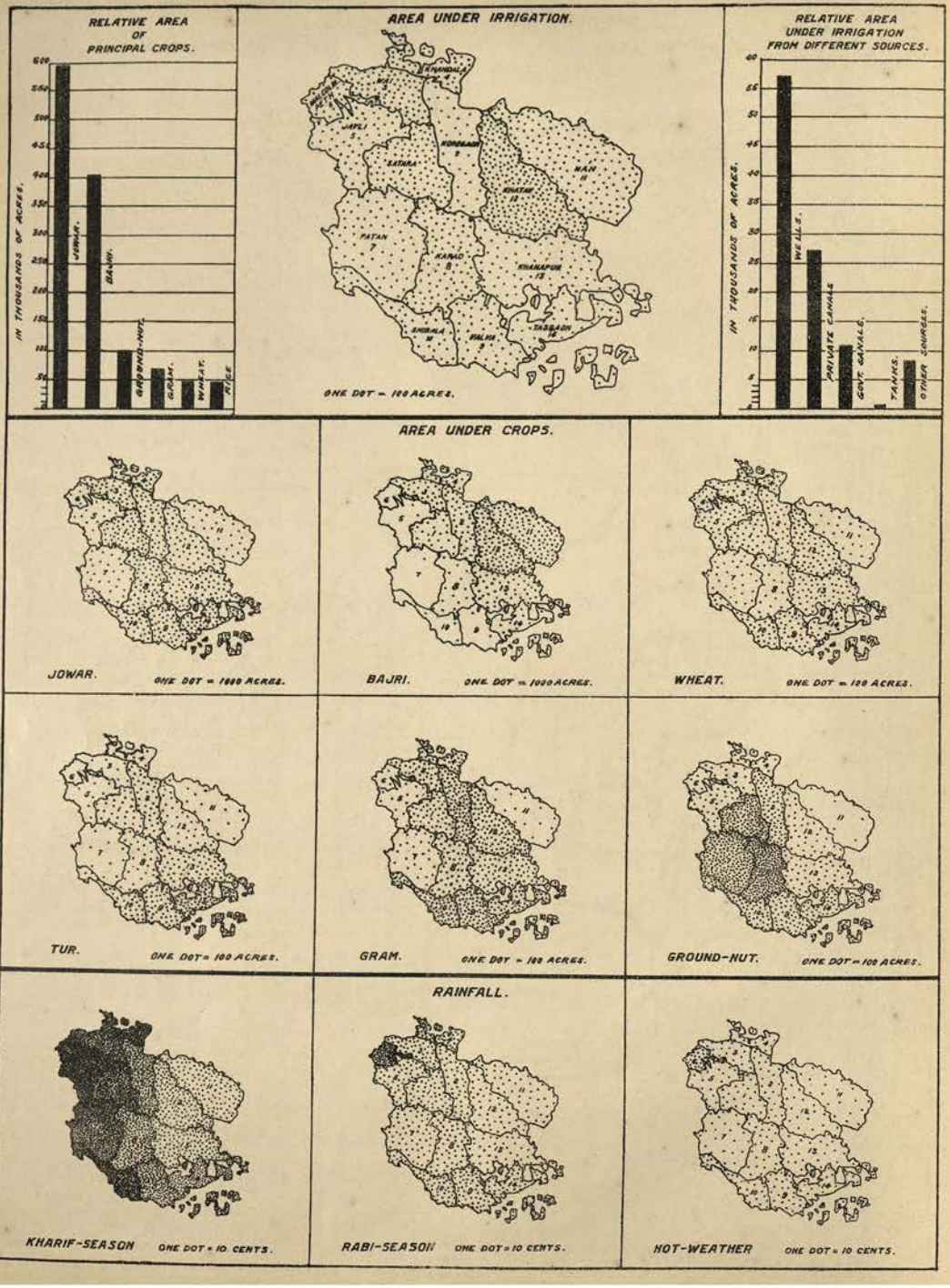
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Gur. Turbat.	Gur. Jowari Bajri.	Gur. Dates.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Sholapur ..	23	16	9	11	68	...	1 4 0	0 10 0	0 8 0
	Not-headquarter towns.									
2	Barsi ..	24	19	10	12	116	...	1 4 0	0 8 0	0 7 11
3	Madha ..	22	15	9	10	142	...	0 14 0	0 6 2	0 7 0
4	Karmala ..	21	17	10	11	77	...	0 12 0	0 6 0	0 5 11
5	Pandharpur ..	25	21	11	13	91	...	0 14 8	0 6 0	0 6 3
6	Sangola ..	21	17	8	10	68	...	1 0 6	0 8 0	0 8 0
7	Malsiras ..	23	20	10	10	116	...	1 0 0	0 6 10	0 7 2
	Average for the period.	23	19	10	11	102	...	0 15 6	0 6 10	0 7 1

Famine Relief—Average Daily Number 1911-12, 1918-19 and 1920-21.

Month.	1911-12. Relief workers.	Dependents.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief workers.	Dependents.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief workers.	Dependents.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.
February ..													..	..	852	852	11	10
March ..													537	..	1,890	2,427	11	10
April ..													1,673	..	5,351	7,024	10	10
May ..													1,390	..	5,506	6,896	10	11
June ..													9,310	1,427	6,213	17,000	9	9
July ..													6,503	1,733	6,723	14,959	9	9
August ..													..	..	3,066	3,066	8	9
September ..													..	..	3,500	3,500	9	7
Average for the period.													2,400	401	4,389	7,190	10	9

SATARA DISTRICT.

SATARA DISTRICT.



SATARA DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

NOT LIABLE TO FAMINE.
LESS LIABLE TO FAMINE BUT WITH FREQUENT SCARCITY.
VERY LIABLE TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1918-19.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1920-21.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

NUMBER OF CATTLE.

1909-10

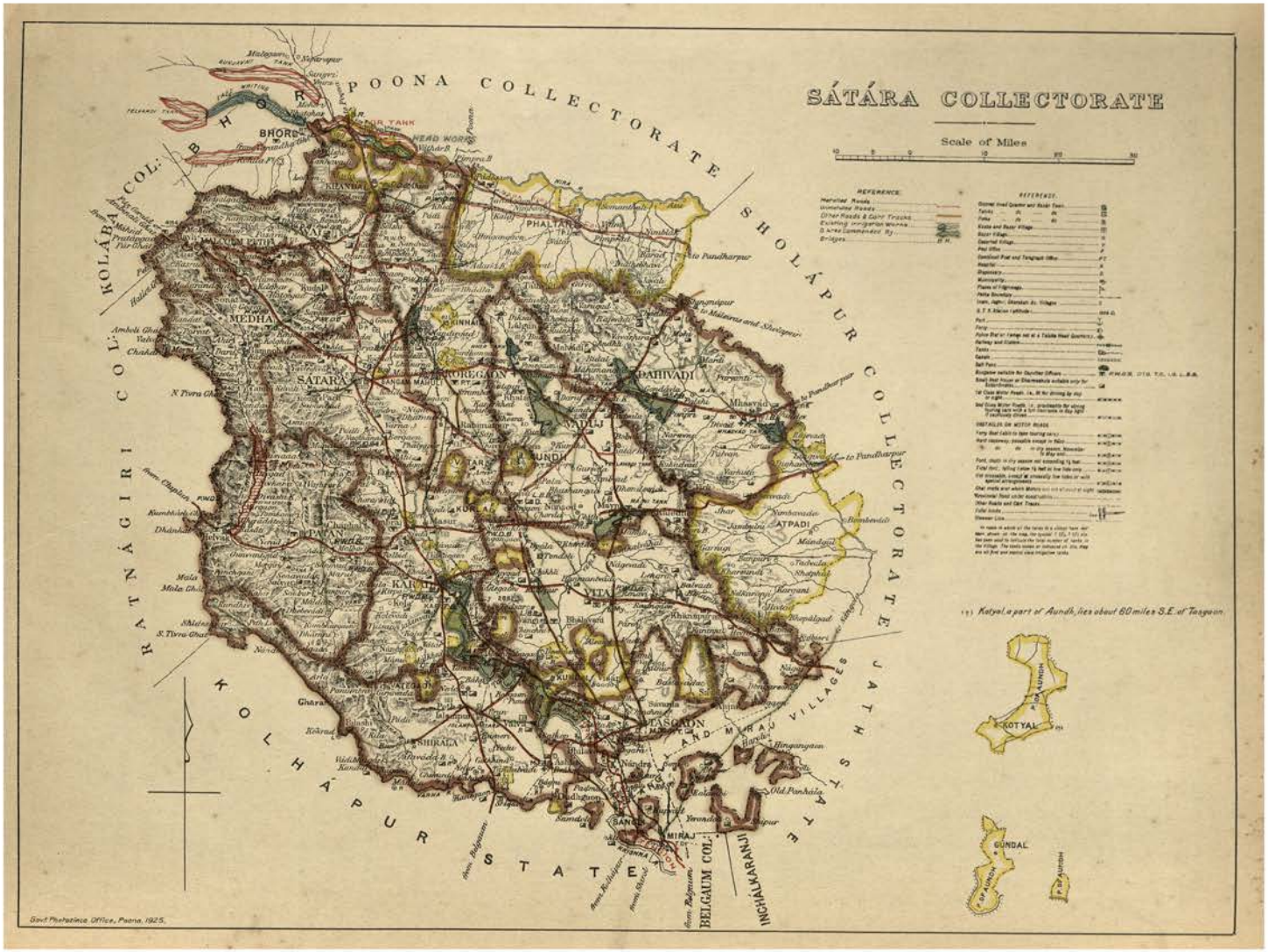
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


SÁTÁRA COLLECTORATE
Scale of Miles
POONA COLLECTORATE
SHOLÁPUR COLLECTORATE
JATH STATE
KOLHÁPUR STATE
RATNÁGIRI COL.
KOLÁBA COL.
BHOR
BELGAUM COL.
INCHÁLKARANJI
BHOR
KHANDAL
PHALTAN
MEDHA
SÁTÁRA
KOREGAON
DAHIVADI
NADUJ
AUNDH
PATAN
KARAD
VITA
TASGAON
SHIRÁLA
SANGLI
MIRAJ
ATPADI
KOTYAL
GUNDAL
Kotyal, a part of Aundh, lies about 60 miles S.E. of Tasgaon.
Govt. Photozinco Office, Poona, 1925.

SATARA

POSITION AND AREA

The district of Satara lies between 16° 48′ and 18° 11′ north latitude and 73° 36′ and 74° 58′ east longitude and covers an area of 4,910 square miles. It is bounded on the north by the States of Bhor and Phaltan and the Nira river, separating it from Poona; on the east by Sholapur district and the States of Aundh and Jath; on the south by the river Varna, separating it from the States of Kolhapur and Sangli and by a few villages of Belgaum district; and on the west, along the Western Ghats, by the districts of Kolaba and Ratnagiri.

PHYSICAL FEATURES

From Mahableshwar in the north-west corner of the district 4,717 feet above the sea, start two hill ranges of equal height and nearly at right angles to each other—one, the main range of the Sahyadris or Western Ghats running towards the south for sixty miles, and the other the Mahadeo range of hills, which, going first in an easterly and then in a south-easterly direction, extends towards the eastern boundary, where it sinks gradually into the plain. These hills throw out numerous spurs over the district, forming the valleys of the several streams which make up the head waters of the Krishna, one of the largest rivers in southern India. Except near Mahableshwar, and in the valleys of the Koyna, the hills of the district are very low and have a strikingly bare and rugged aspect. The Mahadeo range even in the rainy season is but scantily covered with verdure. The hills are bold and abrupt, presenting in many cases bare scarps of black rock.

Within Satara limits are two river systems: The Bhima system in a small part in the north-east, and the Krishna system throughout the rest of the district. A narrow belt beyond the Mahadeo hills drains north into the Nira, and the north-east corner of the district drains south-east along the Man. Of the total length of the Krishna of eight hundred miles, one hundred and fifty are within this district. It rises on the eastern brow of the Mahableshwar plateau. The six feeders on the right bank of the Krishna are the Kudali, Vena, Urmodi, Tarli, Koyna and Varna; the two on the left are the Vasna and Yerla. Of the Bhima river system, the chief Satara representatives are the Nira in the north and the Man in the north-east. The Nira rises within the limits of the State of Bhor, and running along the northern boundary of the Khandala Peta, Phaltan State and Malshiras taluka in Sholapur, after a length of 130 miles, falls into the Bhima. The Man river rises in the hills in the north-west of the Man taluka and after a course of a hundred miles through that taluka and the Atpadi Mahal of Aundh State and through Sangola and Pandharpur in Sholapur, joins the Bhima at Sarkoli, ten miles south-east of Pandharpur.

NATURAL DIVISIONS

Like other districts which are bounded on the west by the Sahyadris, Satara may be sub-divided into three belts, namely, a moist hilly western and a dry eastern country separated by a Transition Tract. The hilly west is here called the Dongri or hill country. The east goes by the usual name of Desh. The Transition Tract is flatter and contains more rich level soil, while the Desh is more elevated and hilly and has a poorer soil than in similarly situated portions of other districts. Nevertheless in point of liability to failure of rainfall the Desh of Satara resembles the Desh elsewhere. The central or Transition belt is a tract of rich, well-watered valleys, nearly parallel to each other, widening to the east and south-east and separated by sharp cut spurs from the Ghats. The richness of the soil of the Transition Tract and its unusual facilities for irrigation from wells and running streams enhance its measure of immunity from the effects of prolonged drought. The Desh is hilly and is intersected by a high plateau 250 feet above the level of the Krishna Valley. The district has no general slope to the east from the crest of the Western Ghats, but a general slope southwards from the ridge of the Mahadeo range. The conformation of the district is thus in some respects strikingly different from that of other Deccan districts, and to these particular features must be attributed the comparatively smaller liability to famine. The taluka (Man) most insecure has only eighty-eight persons to the square mile. It is a grazing ground rather than a tract for tillage.

The dividing lines between the Transition Tract and the Dongri and the Desh country, respectively, may be taken to be:—

On the West.—Along the east boundary of Wai to Satara and thence south along the east boundary of Patan.

On the East.—Along the railway to the Salpa Ghat and thence along the east boundaries of the Koregaon, Karad and Valva talukas.

This division is approximate but accurate enough for the purposes of this account. The talukas of Man, Khatav, Khanapur and Tasgaon lie wholly in the Desh and those of Wai, Javli and Patan wholly in the Dongri tracts. The areas of the Dongri and Transition tracts are about equal (1,400 square miles); the area of the Desh is a little larger, about two thousand square miles.

CLIMATE

According to the height above, and distance from, the sea, the climate varies in different parts of the district. In the east, especially in the months of April and May, the heat is considerable. But near the Ghats it is much more moderate, being tempered by the sea-breeze. The temperature falls as low as 58°F in January and reaches 100°F and over in May. During the south-west monsoon the fresh westerly breeze makes the climate agreeable.

RAINFALL

The south-west monsoon sets in about the middle of June though it is earlier in the furthest west. The wettest month is July. At the end of September *Hast* rains which are not from the regular south-west monsoon but from the north-east monsoon, fall heavily. Occasional falls occur in late October and even in November.

The tables exhibit the fluctuations of the rainfall. It will be noticed that the average fall in the Dongri tracts varies from nearly thirty inches at Wai and forty at Satara to over two hundred and fifty inches on the crest of the Ghats. The Transition Tract enjoys a fall of about thirty inches. The Desh receives from twenty to twenty-five inches, the fall being comparatively better in the south. It will thus be seen that in the Desh of Satara the rainfall in the aggregate is somewhat heavier than in the Desh elsewhere in the Deccan.

SOILS

The soils of the district belong to three main classes: red, black and light. The black (*kali*) is generally found in belts lying along the banks of the leading streams. In the Krishna valley is found the broadest belt of this rich soil which yields the best garden and dry crops in the district. The leading light coloured soils are the *Mal ran* or *Murum mal*, a hard rocky soil commonest at the bases of the more easterly hills. Near the heads of the streams issuing from the Sahyadris the soil of the valley is red and yields most of the rice grown in the district.

CROPS

The crops of the district are:—

The Dongri Tract.—Continuous rice in low-lying land or terraced hill-slopes, and hill millets on the uplands, are the principal crops. The hill sides are poor. They are tilled for a few years and then kept waste to recoup themselves.

The Desh.—*Bajri* holds the first place especially in the higher lands of Man and Khatav. In Tasgaon the cropping is more like that of the Transition Tract, where early and late *jowar*, and also a considerable area of *bajri* are grown. Cotton also is grown in this taluka and in Valva but nowhere else. Neither wheat nor linseed are of much importance.

The Krishna valley and the mouths of the side valleys form one of the richest tracts of the Deccan.

Normally, *jowar* occupies about six lakhs of acres and *bajri* about four lakhs of acres. Rice, wheat and *ragi* are grown to the extent of forty to fifty thousand acres each. Among pulses, gram with nearly seventy thousand acres under it and *tur* with forty thousand acres are the most important. Groundnut is by far the most important oilseed and its cultivation is steadily increasing—the area under it during the year 1922-23 reaching over one lakh of acres. Cotton with fifteen to twenty thousand acres, tobacco with ten thousand acres and sugarcane with nearly an equal area, are the other crops worth a note.

CATTLE

To the west of the Satara district, jungle grass is available as in other tracts along the Western Ghats and a considerable number of cattle are bred there in the ordinary way; but these are of little importance. The interest in this district lies in the two fine breeds that are produced under quite different conditions, *viz.*, the Mhasvad Khillaris bred mainly in the Man taluka and the Krishna Valley cattle, bred along the banks of the Krishna river and its tributaries in the

south of the district. In neither case are there to be found bands of wandering breeders like the Rabaris of Upper Gujarat or professional herdsmen of the Satpuras, but the cattle are bred by ordinary cultivators as an essential part of their farming operations, the Khillaris being largely and the Krishna Valleys mainly stall-fed. It is necessary to emphasize here that the excellence of these cattle is due less to the bounty of nature in providing abundant grazing than to the skill and care of the breeders in the important matters of mating and feeding.

FORESTS

There are about 517 square miles of forest and six square miles of fodder and fuel reserves in charge of the Forest Department in addition to about 188 square miles of pasture under the Revenue Department. Except along the line of the Western Ghats, the forests are scattered over the district and much broken by private and cultivated land. Besides, most of the teak having been already extracted from the forests, they cannot be called very remunerative now.

IRRIGATION

Details of irrigation works are shown in the tables and in the map. In a year of scanty rainfall much reliance cannot be placed on irrigation works. The most important work in this district, *viz.*, the Mhasvad Tank, benefits Sholapur, not Satara. The other works are the Krishna Canal, Rewadi Canal, Upper Man river works, Yerla river works, Chikhli Canal and Maini Tank.

Mhaswad Tank.—This irrigation tank is formed by an earthen dam across the Man river and has a storage capacity of 2,602 million cubic feet. It is situated on the eastern border of the Satara district and irrigates lands in the Sangola and Pandharpur talukas of the Sholapur district. Although the capacity of the tank is considerable, the supply of water is not very reliable.

Krishna Canal.—The head works of this canal are built across the Krishna river at Khodshi, a village two miles above Karad. The main canal is thirty-five miles long and the distributaries twenty-six miles. The gross area commanded by the canal is 28,327 acres and the irrigable area is 12,320 acres.

Rewadi Canal.—This irrigation work has its head works on the Vasna river at the village of Palsi. They are of native construction having been built as far back as the Peshwa's time. The works were left in an unfinished condition and when taken over by British Government they were restored in 1863. The main canal is nearly six miles in length and distributaries a little over five miles. The canal commands an area of 3,813 acres of which 1,920 acres are irrigable.

Upper Man River Works.—This system of irrigation comprises (*a*) Pingli Tank, (*b*) Bidal Feeder Channel, (*c*) Pingli Canal, (*d*) Dahiwadi Canal, (*e*) Pingli Nallah Pick-up-weir, (*f*) Gondowli Canal and (*g*) Lodhavada Canal, each described in brief as under :—

(*a*) Pingli Tank is formed by an earthen dam 5,553 feet long with a maximum height of fifty-three feet, situated on the Karanj Nallah which forms one of the tributaries of the Man river and is three miles above the head works of the Gondowli Canal. The catchment area of the tank is twenty square miles and the available capacity above outlet level is 195 million cubic feet.

(*b*) *Bidal Feeder Channel.*—A little below the Bidal village a masonry weir has been constructed across the river Man and feeder channel six miles in length is led therefrom to the Pingli Tank. The weir is 265 feet long and is founded on a rocky barrier.

(*c*) *Pingli Canal* is three miles in length and commands an area of 1,100 acres between the Pingli Tank and Gondowli Canal. It is led from the tank outlet on the right bank of the Karanj Nallah.

(*d*) *Dahiwadi Canal* is about three miles in length and starts from a regulator below the Pingli Tank outlet, passing immediately in rear of the dam, across the old bed of the Pingli Nallah in embankment. It then follows as nearly as possible the contour of the country to the Dahiwadi-Gondowli Road. A quarter of a mile after crossing this road, the channel bifurcates, one branch passing along the ridge discharges its tail water into the Man river above the Gondowli weir, and the other passing along the east side of the road, tails into the Karanj or Pingli Nallah above the pick-up-weir. The masonry works of this canal are very simple and consist chiefly of ordinary escapes.

(*e*) *Pingli Nallah Pick-up-weir.*—This is a small masonry weir built across the Nallah, a little above the iron aqueduct by which the Gondowli Canal crosses the stream and the leakage intercepted thereby is led by a short channel into the Gondowli Canal below the aqueduct. Water from the Pingli Tank can be passed into the Nallah direct when required by the Gondowli Canal.

(*f*) *The Gondowli Canal* is a small work having its head work—a masonry weir on the Man river one and a half miles above Gondowli village and three miles south-east of Dahiwadi. The head works are situated at the site of an old ruined *Bandhara* or masonry weir built across a rocky barrier, having a catchment area of sixty-eight square miles. The canal taking off on the right bank of the river is modern. It is nearly seven miles in length with one main branch channel two miles long.

(*g*) *Lodhavada Canal.*—The weir in connection with this work is situated on a rocky barrier across the Lodhavada Nallah, a little above the village of that name, at a place where there is a sudden fall in its bed enabling the channel to be easily led away.

The total length of the canals under the 'Upper Man River Works' is over seventeen miles and the branch channels a little above six miles. The total area under command on this system is 8,443 acres of which 7,623 acres is irrigable.

Yerla River Irrigation Works.—This system comprises (*a*) Head Work at Khatgaon, (*b*) Yerla Right Bank Canal, (*c*) Yerla Left Bank Canal, (*d*) Nehr Tank and (*e*) Nehr Tank Right Bank Canal.

The Right and Left Bank Canals are eleven and nine miles long respectively. They take off above a masonry weir 538 feet in length and sixteen feet in height built across the Yerla River at Khatgaon three miles below the site of the Nehr Tank. The discharging capacity of each of these canals is forty-two cubic feet per second at the head.

The length of the Nehr Tank Right Bank Canal is eight miles. The discharging capacity of the canal is thirty-eight and a half cubic feet per second at the head.

The Nehr Tank is a storage reservoir on the Yerla River twenty-two miles east of Satara. This tank is formed by an earthen embankment 4,820 feet in length and seventy-four feet maximum height. The total capacity of the Tank is 523 million cubic feet.

The combined length of the canals under this system (Yerla River Works) is over thirty-three miles and the total area commanded is 11,234 acres of which 10,680 acres are irrigable.

Chikhli Canal.—The head works of this canal, *viz.*, a masonry weir regulator, etc., are built on the Nandni River which has here a catchment area of 166 square miles. The canal is six and a half miles in length and has a supply discharging capacity of fifteen cubic feet per second. The gross area commanded by this canal is 1,871 acres of which 1,478 acres are irrigable.

Maini Tank Canal.—This irrigation system consists of a storage tank at Maini formed by an earthen dam 3,370 feet in length and with a maximum height of fifty-seven feet, across the Wang Nallah, a tributary of the Yerla River, and a canal leading from the tank on the left bank, about nine miles in length with distributaries about eight miles in length.

The catchment area of the tank is fifty-four square miles. Its contents between full supply level and the out-let sill are 189 million cubic feet.

The canal takes off from a culvert taken through the dam and crosses the waste weir tail channel above a masonry pick-up-weir.

The gross area under command of the canal is 4,876 acres of which 4,625 acres are irrigable by the complete project.

The area under *Patasthal* irrigation is nearly thirty-eight thousand acres. Irrigation from wells is extensive in Deshi parts of the district but many wells in the Eastern Talukas have become dry owing to failure of rains during the last few years. Since 1906 wells have increased by about a thousand.

DRINKING WATER

The supply of drinking water is sufficient except in the east, where in days of drought the deficiency is removed by deepening the wells and digging *hels*, etc., with the help of Government grants and Local Board contributions.

INDUSTRIES

There is no industrial town in this district which can be relied on for relief in case of necessity. There are hand-loom weaving centres at various places, a glass factory at Oglewadi and a small match factory at Karad. An agricultural implement factory has been started at Satara Road Station.

TRADE

The district exports grain and oil-seeds, a certain number of blankets, chillies, *gul* (unrefined sugar) and a little raw cotton. The chief imports are cotton piece-goods, hardware and salt.

COMMUNICATIONS

The Southern Maratha Railway traverses the middle of the district from north to south. The district is exceptionally well provided with roads. The trunk road from Poona to Bangalore runs parallel to the railway at a distance of from ten to twenty miles to the west, and another road runs from north to south in the east of the district. Two metalled roads, one from Wathar station through Wai and the other from Satara, join at Wai, and continue through Mahableshwar to Mahad in Kolaba. Another important metalled road runs from Karad through Patan to Chiplun and thence to the coast. Traffic on these

coast roads is stopped during the height of the monsoon by reason of the closure of the ports. Feeder roads to the railway are numerous.

RELIGION

The total population of the district 1,026,259 is composed of 987,220 Hindus, 35,989 Musalmans, 2,552 Christians and 498 Parsis.

LANGUAGES

Marathi is the prevailing vernacular used by ninety-five per cent. of the people. The other important languages are Hindi (Hindusthani) spoken by three per cent. and Kanarese by one per cent.

BROAD OCCUPATIONS

According to broad occupations 818,218 persons or 59·7 per cent. of the population are dependent for their livelihood on Agriculture. Industry (including mines) supports 93,486 persons or nine per cent. Trade and Transport affords the means of livelihood to 36,233 persons or 28·7 per cent. while the Professions and the Liberal Arts are responsible for the maintenance of 10,409 persons or one per cent. of the population. The remainder 67,913 persons or 6·6 per cent. have to follow various occupations for their livelihood.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district mainly according to occupations but in a few cases according to castes. The figures are based on the census of 1921 and represent both workers and their dependents.

Pasture and Agriculture.—Of the total population of 827,412 supported by pasture and agriculture, ordinary cultivators number 717,093. Farm servants and field labourers number 61,315 while 39,106 persons are dependent on income from rent of agricultural land. Among the persons engaged in the raising of farm stock, herdsmen, shepherds and goat-herds 8,993 are the most numerous. The bulk of the cultivators are Kunbis or Marathas. The shepherds and breeders are mostly the Dhangars and Gavlis. The Dhangars live in the eastern pasture lands and keep sheep. Some are cultivators. All over the district they, like the Gavlis, breed buffaloes and sell the milk. Many Dhangars are field labourers. Gavlis mostly live in towns. The economic condition of the classes engaged in pasture and agriculture is detailed under that head separately.

Industry.—Under this head the textile workers such as weavers and other workers in cotton, wool, etc., at home and in factories number 28,843. Carpenters and joiners 6,934, basket-makers and workers in bamboos, etc., 2,683 chiefly constitute the wood industry. In the metal industry the most important are workers in iron 4,063 and those in brass, copper, etc., 754. Potters number 5,778. In the food industry the manufacturers of vegetable oils 4,895 and butchers 1,223 are the most numerous. Excavators, well-sinkers and earth-workers 1,337, stone-cutters and dressers 3,576 and bricklayers and masons 1,812 are the chief in the building industry. Under persons following miscellaneous industries, shoemakers 10,846, barbers 5,556, washermen 3,630 and tailors 3,085 deserve a mention. Generally speaking, the condition of the classes engaged in industry is on the whole fair, as these classes nowadays get ample work on reasonable wages.

Trade.—The trade in foodstuffs (excluding hotels) heads the list. It includes grocers and sellers of oil, salt, condiments and spices, etc., 8,175, grain and pulse dealers 2,364 and sellers of milk, butter, fish, poultry, etc., 1,429. Other trades such as the trade in textiles and the trade in firewood, cow-dung cakes, etc., are comparatively insignificant in the district. The traders are chiefly Lingayats, Gujars, Marwadis, Vanis, etc., and as a class are secure from famine.

Professional Beggars (11,197).—The condition of many of them is not quite satisfactory but owing to their migratory habits they may tide over a famine.

Depressed classes.—These include the Mahars and Dheds 84,141, Mangs 26,750, Chambhars 16,854 and Bhangis 371. Mahars are mostly village servants, sweepers in Municipal towns, etc. Mangs are chiefly rope-makers. Chambhars are leather-workers while Bhangis are scavengers in Municipal towns. Some of these classes may require State aid in time of acute distress.

Brahmans (37,991).—They are land-holders, Government servants, priests, petty traders and money-lenders, etc., and are most secure from famine.

Musalmans (35,989).—Most village Musalmans are land proprietors and husbandmen. Of town Musalmans many are merchants, private and Government servants, craftsmen, artizans and a few money-lenders. Few Musalmans will have to resort to relief works in times of famine.

Christians (2,552).—They are few and are well looked after by the Missions.

Parsis (498) are very few and call for no special remarks. They are quite well-to-do.

ECONOMIC CONDITION

The Kunbi who is the cultivator of the district is getting more intelligent and industrious. He certainly compares unfavourably with the Jain cultivator in the south and south-west. The latter is very careful and trusts rather to the good cultivation of a small area than the tillage of an area beyond what his cattle and capital properly justify. Some of the poorer cultivators and many field labourers and others resort yearly to Bombay and other places for employment in the cotton mills and at the wharves. This temporary emigration may be regarded as a valuable safety valve particularly in times of scarcity, but the pressure of over-population is experienced at all times and the railway affords special facilities to emigrants. A considerable number from Javli, Satara and Patan talukas and some from Man, Khatav and Karad talukas also take services in the army. The condition of the Western or Dongri tract has greatly improved. There has been distinct lessening of rain in these tracts and good crops are raised there. Besides, the demand for labour in Bombay and other industrial centres to which there is seasonal migration and where the labour is amply remunerated, has increased the prosperity of this tract. In the east or Desh the average cultivator is fairly intelligent, frugal and industrious. He is not deficient in industry but the rain and subsoil water are apt to fail him. On the other hand the *rayat* of the rich Krishna Valley has better credit and less necessity for recourse to the money-lender.

The population is largely agricultural, but a large number of the people are herdsmen and shepherds. The eastern and western belts of the district afford pasture, though the former is not to be trusted owing to its precarious rainfall. The eastern uplands are essentially sheep grazing grounds. The sheep are brought down to the valleys in the transition tract to feed on the stubble of the crops and on the *babul* pods. The shepherds profit greatly in thus finding free food and *rayats* are very ready to pay them also for the manure secured by sheep-folding on the lands intended for sugarcane, ground-nut and other high cultivation.

There is considerable competition for land investment and the prices obtained are high particularly when the land has been improved by well-digging.

Originally the Brahmans, Lingayats and Jains were the chief money-lenders. But owing to the awakening and growing prosperity of the cultivating classes the number of Brahmans is decreasing and many land-holders among agriculturists taking their place. Marwaris and Gujars are classed as professional *sawkars* (money-lenders). Many of the artisan classes and even Mahars and Chambhars are found in the ranks of occasional money-lenders.

The condition of the village *Watandars*, viz., *Patils* or Headmen, is fairly satisfactory and deserves no special comment.

There is considerable sub-division of survey numbers and holdings throughout the district. The economic drawbacks of such sub-division has been recently engaging attention of those interested in agriculture. The people are somewhat litigious and are not backward in airing their grievances. They resort to relief works as the last resource only, as labour is now better remunerated in Bombay and other business centres.

Migration.—The usual centres of emigration are Bombay, Karachi and Berars. Ordinarily the number of individuals emigrating is about thirty-five thousand though in years of acute famine it is apt to go higher. In the famine year of 1918-19 the number went over forty-five thousand.

The area under cultivation remained almost the same throughout the last decade. In the present decade it has increased by about four and a half lakhs of acres.

There are about six lakhs of cattle in the district of which plough cattle, milch cattle and young stock are roughly one-third each. Sheep and goats which numbered about four lakhs and a quarter in 1915-16 were reduced to three and a half lakhs in 1919-20 presumably owing to the famine of 1918-19. Since 1904 there has been an increase in agricultural stock. Cattle have increased by about one-third, plough cattle and milch cattle having each increased by forty-four and fifty-one thousand. Goats, however, have decreased by twenty-one thousand and sheep by six thousand.

In Man, the holdings are large and average fifteen acres, while the average assessment per acre on fully assessed land is only six annas seven pies. The smallest holdings on the average slightly above five acres each are in Patan, Satara and Karad. The assessment per acre is greatest in Karad, Walwa and Satara where it is over rupees two, annas twelve.

LIABILITY TO FAMINE

Liability to famine depends on the rainfall, and the Dongri portion of the district, being the least liable to failure of rain, is the least liable to famine. For the contrary reason the Desh is most liable. The Transition Tract is intermediate between these; for, its rainfall is uncertain though its soil is

wonderfully good. The superior soil, the irrigation facilities and the normally superior profits of agriculture in the Transition belt and the smaller density of population and physical characteristics of the Desh, somewhat mitigate the pressure of distress as compared with the condition of other Deccan Collectorates.

FORMER FAMINES

In **1876** there was practically no rainfall after August in the eastern half of the district, which suffered severely.

In **1891-92** owing to the late commencement and early cessation of the monsoon there was considerable distress which never, however, approached famine conditions.

In **1896-97** conditions were favourable in the eastern talukas to the end of August but the monsoon ceased early in September and there was practically no rain in October. The *rabi* crop was therefore a complete failure. The chief distress, however, was in the hills where the *kharif* crops had been lost owing to the excessive rain.

In **1899** the rainfall was far below the average and the drought was specially marked east of the Krishna river, that is, in the Man, Khatav, Khanapur and Tasgaon talukas. There was again some distress in the hills. The Wai, Satara and Koregaon talukas were little affected. The monsoon of **1900** was also unfavourable and famine conditions continued in the district till the end of **1901** when the famine works opened in **1899** were closed.

The monsoon of **1911** was not quite satisfactory and the outturn of crops fell below expectations. Conditions however nowhere reached a serious stage.

In **1913** the monsoon set in strongly early in June but failed to last through July and did not reappear until September thus causing complete loss of the early monsoon crop. Again the September rain was light and generally insufficient to bring the *rabi* crops to maturity. Thus there was a complete failure of winter crops also. The affected area comprised the Man and Khatav talukas and Khandala Mahal.

The cause of the famine of **1918-19** was deficient rainfall. There was very little rain in the beginning of June but rainfall was general in the second fortnight of June and the first week of July. After this there was almost a complete break except in the West. *Kharif* crops in East were nearly all lost. The autumn rains too were inadequate and so the *rabi* crops also met with the same fate as *kharif*, but the sudden showers towards the end of November and in early December improved the situation slightly, the *rabi* crops in the Western part being specially benefited. The distress extended over the Satara, Karad, Koregaon, Khatav, Man, Khanapur, Tasgaon and Walwa talukas and the Khandala Mahal. The pinch of this famine was particularly severe, as the people were at that time suffering from the economic effects of the Great War, and the addition of the widespread influenza epidemic further aggravated the situation.

In **1920-21** the area affected consisted of Man, Khatav, Khanapur, Tasgaon, and Walva talukas and the Khandala Mahal. The chief cause of scarcity was as follows :—The *kharif* rainfall was very poor in the East. The *rabi* rains started well in September but ceased abruptly after the first week in October and from that time ceased till the middle of June of the next year. As a result the outturn of both the *kharif* and *rabi* crops was meagre particularly at places noted above.

The results of the Imperial censuses of 1901, 1911 and 1921 are compared below :—

1901	..	..	..	..	1,145,495
1911	..	..	..	..	1,011,278
1921	..	..	..	..	1,026,259

They show a general and gradual decrease in population throughout the district, except in Javli and Patan talukas and Khandala and Shirala Mahals where the figures increased in the returns of 1911 but again fell during the latest census interval. This general decrease in population was greatly aggravated by the influenza epidemic of 1918. Mahableshwar Mahal alone has never experienced a decrease, the returns of 1921 showing an increase of three thousand over the census figures of 1901, and of twelve hundred over that of 1911.

The population may be distributed as follows :—

Western Dongri Tract 28 per cent...	..	..	289,764
Transition Tract 31 per cent.	..	..	317,748
Eastern or Desh Tract 41 per cent.		..	418,747

Roughly about one-fourth of the population may be taken to be insecure by condition and occupation. But allowance must be made for the comparatively assured condition of the Dongri talukas and for the general prosperity of the Transition Tract, which enables not only the cultivators but many of the labouring and the artizan classes dependent on them to live without Government aid in a year of famine, so that not more than a hundred thousand persons are to be considered insecure. Moreover the free migration of people to business centres annually serves to minimise the pressure of distress in the district.

FORECAST OF RELIEF WORKERS

In the recent famine of 1918 which was the most severe known for more than a generation nearly forty thousand persons were in receipt of relief of whom about ten thousand were relief-workers. The number who emigrated was about forty-six thousand. It would therefore appear that hundred thousand is a safe estimate.

SATARA STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

Irrigation Abstract, 1922-23.

Cultivated and Uncultivated Area, 1918-19.

Irrigation Abstract, 1918-19.

Crops, 1922-23.

Crops, 1918-19.

Agricultural Stock, 1918-19.

Agricultural Stock, 1919-20.

SATARA STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For irrigation.	Government Canals. For drinking.	Government Canals. For Cattle and Washing.	Private Canals. For irrigation.	Private Canals. For drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Tanks. For drinking.	Tanks. For Cattle and Washing.	Others Sources. For irrigation.	Others Sources. For drinking.	Others Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Satara ..	.. 2	..	..	.. 104	..	..	561	1,190	1,771	453	32	1,318	6	21
2	Koregaon ..	1	..	..	..	..	..	653	1,261	1,914	534	43	296	2	6
3	Wai ..	..	..	..	..	..	..	388	1,720	2,108	1,034	11	509	2	5
4	Jaoli ..	..	..	..	1	..	1	177	299	476	558	5	1,207	1	6
5	Patan ..	..	..	..	..	..	..	245	443	708	260	16	958	3	..
6	Karad ..	3	..	..	..	..	..	1,274	1,888	3,172	345	1	223	1	9
7	Walwa (Islampur) ..	3	..	..	22	..	..	2,923	1,852	4,775	456	121	1	30	12
8	Man ..	3	..	..	..	..	..	2,447	867	3,314	271	13	319	1	4
9	Khatav ..	1	..	..	..	..	..	1,425	1,450	2,875	181	126	661	..	3
10	Khanapur ..	2	..	..	..	..	..	2,727	1,390	4,117	148	11	1,022	2	8
11	Tasgaon ..	1	..	..	..	..	..	1,098	577	2,675	477	3	46	..	7
	Total ..	14	..	..	126	1	..	15,916	12,167	28,083	5,685	386	6,810	59	97

No.	Taluka.	Others Sources. For irrigation.	Others Sources. For drinking.	Others Sources. For Cattle and Washing.
		No.	No.	No.
1	Satara ..	2	288	6
2	Koregaon ..	..	31	2
3	Wai ..	..	4	..
4	Jaoli ..	..	395	64
5	Patan ..	..	200	28
6	Karad ..	..	1	..
7	Walwa (Islampur) ..	..	9	..
8	Man ..	..	..	..
9	Khatav ..	1	..	..
10	Khanapur ..	..	158	6
11	Tasgaon ..	..	..	48
	Total ..	31	1,022	153

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Krishna Canal ..	28,327	26,453	12,320	12,320	5,066	1,452	6,518
2	Rewari Canal ..	3,813	3,624	1,920	1,920	146	394	540
3	Upper Man River Works.	8,443	7,623	2,080	2,080	260	608	868
4	Yerla River Irrigation Works.	11,234	10,680	6,000	5,480	1,086	1,756	2,842
5	Chikhli Canal ..	1,871	1,478	1,478	1,478	409	131	540
6	Maini Tank ..	4,876	4,625	4,625	4,625	1,111	1,425	2,536
7	Mhasvad Tank ..	*	*	*	*	121	362	483
	Total ..	58,564	54,483	28,423	27,903	8,199	6,128	14,327

* The figures have been given under Sholapur.

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total No.	Acreage. Total Area.	Area of holdings per Assessment holding. Rs. a. p.	Assessment per acre. Rs. a. p.	Assessment per acre. Rs. a. p.
		No.	No.	No.	No.	No.	No.	Acs.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Satara ..	16,137	4,460	392	38	..	21,027	110,779	5 2 10	2 12 1	2 12 11
2	Koregaon ..	10,226	1,789	803	26	4	17,048	132,074	7 8 10	1 7 2	2 5 1
3	Wai ..	10,193	5,911	764	27	1	17,296	119,669	6 8 13	1 2 10	1 15 11
4	Jaoli ..	8,238	4,433	912	59	..	13,644	186,376	7 8 15	1 5 1	2 2 4
5	Patan ..	14,912	5,163	791	25	..	20,891	108,294	5 1 9	1 0 1	1 13 8
6	Karad ..	19,709	6,930	480	13	..	27,085	138,867	5 2 14	1 0 9	1 12 3
7	Walwa ..	23,242	8,639	1,209	66	2	33,158	194,479	5 13 16	1 2 2	2 13 3
8	Man ..	5,245	7,261	2,665	174	7	15,852	252,565	15 9 6	0 9 3	0 6 7
9	Khatav ..	9,132	7,433	1,420	105	..	17,090	181,708	10 10 11	1 4 7	0 14 0
10	Khanapur ..	9,364	7,917	1,918	230	3	19,432	196,179	10 1 10	0 11 1	1 0 4
11	Tasgaon ..	9,156	6,732	1,183	33	2	17,106	146,345	9 5 15	1 1 9	1 13 0
	Total ..	135,454	71,670	12,387	846	20	220,377	1,689,705	7 9 15	1 3 2 7	1 11 5

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre. Rs. a. p.	Fully assessed Area (including Alienated Land in Government Villages). Population.	Incidence per Head of population including Alienations. Rs. a. p.
		Acres.	Rs.		No.	Rs. a. p.
1	Satara ..	90,451	1,28,202	1 1 6	28,944	1 9 11
2	Koregaon ..	108,832	1,46,333	1 1 5	28,459	1 2 11
3	Wai ..	99,789	1,14,822	1 2 5	29,448	1 14 11
4	Jaoli ..	91,434	62,555	0 10 11	18,191	1 4 6
5	Patan ..	93,529	85,311	0 14 7	61,874	1 0 10
6	Karad ..	135,376	2,26,432	2 1 1	109,201	2 2 8
7	Walwa ..	159,161	3,26,796	2 0 9	116,133	2 13 9
8	Man ..	227,632	28,519	0 2 6	53,140	1 7 7
9	Khatav ..	155,705	1,07,386	0 11 3	61,630	1 7 5
10	Khanapur ..	165,025	1,28,092	0 12 5	61,585	2 1 6
11	Tasgaon ..	127,120	1,07,758	1 7 7	68,420	2 11 10
	Total ..	1,419,356	16,34,256	1 2 5	773,687	2 1 8

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross Area Commanded.	Culturable Area Commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Krishna Canal ..	28,327	26,453	12,320	12,320	5,330	2,797	8,127
2	Rewari Canals ..	3,813	3,624	1,920	1,920	239	222	461
3	Upper Man River Works.	8,443	7,623	2,080	2,080	413	696	1,109
4	Yerla River Irrigation Works.	11,234	10,680	6,000	5,480	1,606	2,890	4,496
5	Chikhli Canal ..	1,871	1,478	1,478	1,478	141	33	174
6	Maini Tank ..	4,876	4,625	4,625	4,625	706	1,570	2,276
7	Mhasvad Tank ..	*	*	*	*	184	338	522
	Total ..	58,564	54,483	28,423	27,903	8,819	8,346	17,165

* The figures have been given under Sholapur.

Rainfall.

No.	Station.	Rainfall.	January.	Feb.	March.	April.	May.	June.	July.	August.	Sep.	Oct.	Nov.	Dec.	Total.
			In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1	Satara ..	Maximum 1882 ..	..	..	0·58	0·91	1·97	15·38	27·79	3·23	3·04	0·96	2·37	..	56·23
		Minimum 1918 ..	0·19	..	..	..	3·66	1·11	3·17	5·04	0·95	0·38	2·77	..	17·27
		Average ..	0·09	0·08	0·14	0·73	1·62	6·69	13·51	7·51	1·75	0·45	1·45	0·12	33·72
		Rainfall for 1922-23 ..	..	..	1·27	0·82	..	8·60	13·57	4·64	0·84	3·27	13·20	..	46·21
		Maximum 1892 ..	..	..	..	1·00	4·05	7·13	10·15	4·44	6·94	6·37	2·55	..	44·63
2	Koregaon ..	Minimum 1918 ..	..	..	0·26	..	0·56	1·48	1·84	2·25	0·92	0·42	2·02	0·06	13·10
		Average ..	0·15	0·07	0·12	0·82	1·51	4·46	7·54	4·76	3·15	0·97	0·22	0·22	28·01
		Rainfall for 1922-23 ..	..	0·12	0·43	2·16	1·06	4·98	7·04	2·59	1·32	14·04	..	..	30·41
		Maximum 1896 ..	..	..	2·47	1·28	14·45	16·31	11·94	1·39	0·08	1·39	1·04	..	50·35
3	Wai ..	Minimum 1918 ..	0·05	0·23	0·95	3·12	1·13	2·02	1·63	1·36	0·36	2·34	0·15	0·13	13·77
		Average ..	0·12	0·06	0·17	0·78	1·22	5·21	8·34	4·77	1·59	1·23	0·16	0·16	29·82
		Rainfall for 1922-23 ..	..	0·20	0·28	0·50	0·70	6·87	6·32	1·15	0·63	2·14	8·28	..	28·07
		Maximum 1915 ..	2·14	..	0·05	1·64	..	6·99	8·41	0·70	2·10	2·64	1·40	..	36·32
4	Khandala P. ..	Minimum 1904 ..	..	..	..	..	..	0·63	0·72	0·38	2·44	4·45	..	..	8·62
		Average ..	0·25	0·04	0·07	0·57	1·16	2·45	4·27	2·53	4·23	3·19	0·91	0·17	20·87
		Rainfall for 1922-23 ..	..	0·30	1·05	0·15	3·15	2·31	..	..	0·41	1·59	12·20	..	21·16
		Maximum 1883 ..	..	..	0·01	0·41	2·45	24·97	44·15	6·66	11·50	2·89	4·36	0·10	98·90
5	Panchgani D. ..	Minimum 1899 ..	..	..	..	7·02	7·72	10·12	5·03	3·07	6·42	0·59	..	..	32·97
		Average ..	0·13	0·10	0·09	1·30	1·73	11·06	21·01	13·34	9·79	3·92	1·57	0·23	61·27
		Rainfall for 1922-23 ..	..	0·07	0·19	1·44	1·98	10·36	24·44	7·86	3·92	12·56	4·45	..	96·27
		Maximum 1882 ..	..	..	0·26	1·96	35·47	58·86	51·37	5·01	1·19	2·26	0·94	111·46	
6	Medha (Javli) ..	Minimum 1918 ..	..	..	..	1·96	3·26	8·29	11·61	0·45	2·00	2·73	0·16	32·36	
		Average ..	0·09	0·12	0·06	1·08	1·36	14·13	28·99	16·33	5·58	3·29	1·19	0·23	72·46
		Rainfall for 1922-23 ..	..	0·03	2·12	0·79	0·35	17·98	33·83	7·62	3·55	1·23	9·32	..	76·59
		Maximum 1896 ..	..	..	..	0·97	2·27	20·63	191·61	127·53	11·79	1·40	1·18	0·03	402·41
7	Malcolmpeth P. ..	Minimum 1899 ..	..	..	..	16·30	1·67	38·02	42·69	29·73	10·26	0·93	..	..	139·60
		Average ..	0·14	0·08	0·13	3·34	6·02	104·79	79·57	74·93	28·35	3·90	1·51	0·28	295·67
		Rainfall for 1922-23 ..	..	0·07	2·28	0·59	0·10	95·86	112·38	50·74	54·02	1·40	4·48	..	252·52
		Maximum 1882 ..	..	..	1·08	..	9·15	31·48	55·93	5·65	7·86	0·96	0·15	0·22	103·43
8	Patan ..	Minimum 1899 ..	..	..	..	1·30	0·07	8·95	6·68	3·18	3·99	0·55	..	..	24·72
		Average ..	0·08	0·06	0·19	0·75	3·71	11·08	26·62	15·42	5·40	1·95	1·28	0·26	66·51
		Rainfall for 1922-23 ..	..	0·05	0·42	0·29	0·17	11·68	38·95	11·62	5·09	0·15	6·05	..	73·97
		Maximum 1882 ..	..	..	1·32	0·17	2·28	15·89	19·26	2·14	8·03	0·33	1·76	0·31	51·49
		Minimum 1918 ..	..	..	..	..	1·05	1·33	2·10	2·10	0·73	0·13	1·61	..	12·45
9	Karad ..	Average ..	0·15	0·06	0·19	0·70	1·90	4·77	7·71	4·78	3·82	1·07	1·24	0·30	29·69
		Rainfall for 1922-23 ..	..	..	0·66	0·17	1·57	7·12	13·67	0·43	1·56	0·94	5·04	..	29·29
		Maximum 1882 ..	..	..	0·31	0·59	3·26	13·50	12·32	1·71	3·52	0·33	0·22	..	40·75
		Minimum 1883 ..	..	..	..	0·08	..	1·68	2·27	1·99	1·13	0·30	0·40	..	10·50
10	Islampur (Valva) ..	Average ..	0·17	0·11	0·18	0·98	1·57	4·51	5·55	3·51	1·88	0·45	0·30	0·36	19·80
		Rainfall for 1922-23 ..	..	..	0·75	..	2·94	4·51	4·30	1·26	0·75	4·50	6·20	..	26·21
		Maximum 1882 ..	..	..	1·21	0·91	4·46	26·44	24·44	7·58	1·90	0·75	0·22	..	57·96
		Minimum 1899 ..	..	..	0·10	..	1·21	5·23	2·14	0·75	3·69	1·44	..	..	15·55
11	Shirala P. ..	Average ..	0·08	0·05	0·15	0·99	3·01	15·90	11·33	4·58	2·05	1·14	1·28	0·20	40·22
		Rainfall for 1922-23 ..	0·09	0·03	0·76	0·14	1·93	6·66	9·74	2·89	1·24	3·74	9·02	..	40·22
		Maximum 1876 ..	..	..	0·24	0·53	6·30	2·84	2·09	0·51	12·43	10·99	..	..	30·92
		Minimum 1876 ..	..	..	..	..	0·30	6·04	4·07	2·07	0·70	..	0·39	0·39	14·49
12	Dahiwadi (Man) ..	Average ..	0·16	0·10	0·11	0·61	1·42	3·05	2·32	1·63	5·34	2·99	0·93	0·37	19·03
		Rainfall for 1922-23 ..	..	..	1·51	..	..	3·57	1·58	..	1·57	1·35	11·57	..	20·55
		Maximum 1916 ..	..	..	..	..	4·49	1·20	12·44	0·39	9·14	6·28	2·55	..	36·49
		Minimum 1876 ..	..	..	..	..	..	1·64	1·32	0·51	2·01	1·08	0·03	..	6·59
13	Mhasvad D. ..	Average ..	0·17	0·07	0·14	0·70	1·18	2·80	2·22	1·73	6·22	3·06	0·94	0·35	19·38
		Rainfall for 1922-23 ..	..	..	1·51	0·02	0·17	4·95	1·46	0·83	0·67	2·21	13·23	..	25·99
		Maximum 1916 ..	..	..	..	0·72	3·15	4·72	9·88	0·80	9·56	5·35	2·00	..	36·18
		Minimum 1918 ..	0·68	..	0·03	..	2·45	0·58	0·41	0·06	3·84	0·65	1·28	0·20	10·68
14	Vadoi (Khatav) ..	Average ..	0·19	0·12	0·14	0·59	2·79	2·02	3·00	2·13	5·77	3·14	0·41	0·20	20·92
		Rainfall for 1922-23 ..	..	..	1·76	0·50	0·12	2·02	2·23	0·30	0·25	0·48	11·69	..	19·35
		Maximum 1882 ..	0·14	..	0·22	..	2·79	13·93	10·66	2·70	6·47	2·90	1·88	0·07	38·59
		Minimum 1876 ..	..	..	..	0·08	0·10	2·28	3·73	1·20	0·15	1·49	..	..	8·75
15	Phaltan D. ..	Average ..	0·14	0·09	0·21	0·68	1·64	4·00	5·69	3·80	4·67	3·48	0·80	0·36	25·32
		Rainfall for 1922-23 ..	..	0·17	1·18	0·10	0·47	4·89	1·07	0·77	0·73	4·14	10·44	..	28·14
		Maximum 1895 ..	..	..	..	0·29	1·47	3·60	3·13	2·67	15·35	8·41	2·43	..	38·05
		Minimum 1876 ..	..	..	..	..	0·40	0·78	1·63	0·33	1·56	0·26	..	..	10·35
16	Vita (Khanapur) ..	Average ..	0·14	0·13	0·11	0·81	1·57	3·34	3·89	2·77	5·19	3·15	0·82	0·31	22·38
		Rainfall for 1922-23 ..	0·11	0·29	2·99	0·22	1·02	1·69	3·59	0·44	0·18	1·14	5·53	..	16·79
		Maximum 1882 ..	..	..	0·15	..	2·27	10·76	19·59	2·64	6·30	2·74	1·38	..	46·73
		Minimum 1876 ..	..	..	..	1·30	1·94	2·81	3·44	..	0·30	0·10	..	..	9·89
17	Tasgaon ..	Average ..	0·18	0·06	0·20	1·01	2·26	4·72	5·08	3·08	4·99	3·87	1·32	0·31	25·44
		Average of the non-headquarter towns.	0·16	..	0·03	0·47	0·40	1·12	2·54	4·56	1·28	0·20	0·95	4·17	15·48

Temperature Details (Satara).

Year.	Temperature.	January.	Feb.	March.	April.	May.	June	July.	August.	Sep.	Oct.	Nov.	Dec.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	80	86	92	97	94	81	79	78	84	88	88	86
	,, minimum ..	66	70	73	81	81	77	75	74	73	73	72	72
	Absolute maximum ..	91	94	98	102	100	90	84	82	92	92	90	88
	,, minimum ..	63	66	68	75	79	74	74	73	72	70	70	70
1914	Mean maximum ..	83	85	93	98	99	95	80	79	84	88	85	86
	,, minimum ..	67	70	72	79	83	78	75	75	75	73	71	72
	Absolute maximum ..	84	90	98	105	102	90	85	83	88	92	89	89
	,, minimum ..	66	68	72	75	81	74	74	74	75	74	70	70
1915	Mean maximum ..	83	85	92	100	101	94	85	86	87	89	87	86
	,, minimum ..	70	70	75	82	84	81	74	75	76	77	76	69
	Absolute maximum ..	84	88	99	102	103	94	90	92	92	102	89	89
	,, minimum ..	70	68	72	76	84	74	74	74	74	75	73	67
1916	Mean maximum ..	84	79	99	102	101	87	83	82	88	90	88	87
	,, minimum ..	72	74	80	83	83	76	76	75	76	75	73	63
	Absolute maximum ..	86	87	103	104	104	90	85	84	90	95	93	88
	,, minimum ..	66	70	78	80	80	75	75	75	75	73	68	56
1917	Mean maximum ..	88	91	99	101	101	95	88	87	87	88	90	88
	,, minimum ..	69	72	75	78	78	76	77	77	77	77	70	67
	Absolute maximum ..	91	94	102	103	101	96	92	91	92	92	93	92
	,, minimum ..	60	70	66	74	77	75	75	75	75	75	68	59
1918	Mean maximum ..	87	94	100	102	100	86	84	86	89	91	92	91
	,, minimum ..	62	74	77	82	81	70	76	75	77	78	75	66
	Absolute maximum ..	89	100	102	106	103	90	90	90	92	95	94	89
	,, minimum ..	58	69	74	77	72	68	68	74	76	77	64	62
1919	Mean maximum ..	88	87	97	101	99	89	85	78	83	79	90	83
	,, minimum ..	66	67	76	82	83	75	75	74	75	76	74	69
	Absolute maximum ..	92	91	101	105	102	98	95	91	95	91	95	91
	,, minimum ..	62	64	68	77	78	73	73	72	74	72	70	63
1920	Mean maximum ..	87	91	99	100	97	91	81	83	89	93	91	86
	,, minimum ..	70	70	72	83	82	79	77	76	78	80	77	67
	Absolute maximum ..	91	99	101	104	101	96	92	88	92	98	93	91
	,, minimum ..	67	65	74	76	80	75	75	75	76	75	73	65
1921	Mean maximum ..	84	91	104	103	103	92	87	82	88	85	81	86
	,, minimum ..	69	77	86	95	85	80	77	77	77	77	75	66
	Absolute maximum ..	95	97	105	108	105	98	92	88	92	90	89	88
	,, minimum ..	62	66	80	82	83	77	74	72	74	74	64	62
1922	Mean maximum ..	88	91	100	102	105	90	77	77	81	93	82	86
	,, minimum ..	69	71	79	85	85	80	73	74	78	80	75	64
	Absolute maximum ..	92	96	104	106	108	98	80	78	92	98	92	86
	,, minimum ..	64	66	74	80	82	64	70	70	72	74	68	58

Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur-Dal.	Jowari-Kadbi.	Dry Grass.	Wages per diem per Man. Skilled Labour.	Ordinary Labour.	Field Labour.
								Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter town.									
1	Satara ..	20	18	9	11	41	80	0 8 0	0 6 0	0 10 0
	Non-headquarter towns.									
2	Koregaon ..	21	21	12	11	83	..	0 7 0	0 5 0	0 8 0
3	Wai ..	19	17	8	10	24	61	0 8 0	0 6 0	0 9 0
4	Khandala P. ..	18	16	9	8	..	80	0 12 0	0 8 0	0 12 0
5	Medha (Javli) ..	20	18	11	10	56	240	0 8 0	0 6 0	0 9 0
6	Malcolmpeth P. ..	20	17	9	9	27	92	0 12 0	0 8 0	0 12 0
7	Patan ..	20	..	10	9	46	39	0 7 0	0 5 0	0 7 0
8	Karad ..	19	..	10	9	50	..	0 8 0	0 6 0	0 8 0
9	Islampur (Valva) ..	22	..	10	10	59	..	0 8 0	0 6 0	0 8 0
10	Shirala P. ..	24	..	10	9	68	91	0 8 0	0 6 0	0 8 0
11	Dahiwadi (Man) ..	21	19	9	9	21	..	0 8 0	0 6 0	0 8 0
12	Vadoi (Khatav) ..	20	19	9	9	..	..	0 8 0	0 6 0	0 8 0
13	Vita (Khanapur) ..	20	19	10	10	56	..	0 8 0	0 6 0	0 8 0
14	Tasgaon ..	20	20	12	10	..	..	0 8 0	0 6 0	0 8 0
	Average of the non-headquarter towns.	21	18	10	9	49	99	0 8 0	0 6 0	0 8 0

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur-Dal.	Jowari-Kadbi.	Dry Grass.	Wages per diem per Man. Skilled Labour.	Ordinary Labour.	Field Labour.
								Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter town.									
1	Satara ..	25	24	14	18	116	107	0 10 1	0 4 6	0 6 0
	Non-headquarter towns.									
2	Koregaon ..	26	25	15	18	176	..	0 10 4	0 4 6	0 6 0
3	Wai ..	25	24	15	17	98	120	0 10 4	0 4 6	0 6 0
4	Khandala P. ..	23	23	15	16	68	240	0 12 0	0 5 0	0 6 0
5	Medha (Javli) ..	25	24	15	17	92	240	0 8 0	0 5 0	0 6 0
6	Malcolmpeth P. ..	20	19	14	13	33	57	0 12 0	0 5 0	0 6 0
7	Patan ..	28	27	15	17	67	61	0 12 0	0 5 0	0 6 0
8	Karad ..	24	22	15	16	52	..	0 12 0	0 5 0	0 6 0
9	Islampur (Valva) ..	26	24	15	17	42	..	0 12 0	0 5 0	0 6 0
10	Shirala P. ..	24	22	15	17	128	72	0 10 0	0 5 0	0 6 0
11	Dahiwadi (Man) ..	21	19	14	14	98	91	0 10 0	0 5 0	0 6 0
12	Vadoi (Khatav) ..	20	19	14	13	42	..	0 10 0	0 5 0	0 6 0
13	Vita (Khanapur) ..	20	19	14	13	65	128	0 10 0	0 5 0	0 6 0
14	Tasgaon ..	29	26	15	15	65	..	0 11 0	0 5 0	0 6 0
	Average of the non-headquarter towns.	25	24	16	16	75	99	0 9 4	0 4 3	0 5 4

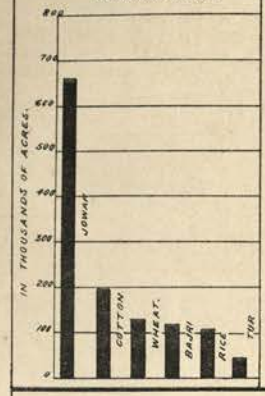
Famine Relief—Average Daily Numbers—1911-12, 1918-19 & 1920-21.

Month.	1911-12. Relief Workers.	Dependents.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependents.	Gratuitously relieved.	Total.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
January ..

BELGAUM DISTRICT

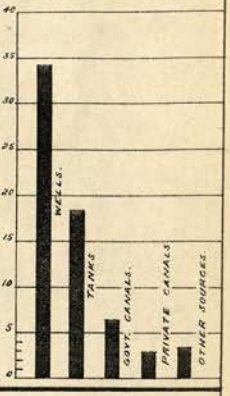
BELGAUM DISTRICT.

RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER IRRIGATION.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



AREA UNDER CROPS.

JOWAR. ONE DOT = 1000 ACRES.

BAJRI. ONE DOT = 1000 ACRES.

RICE. ONE DOT = 100 ACRES.

WHEAT. ONE DOT = 1000 ACRES.

TOBACCO. ONE DOT = 100 ACRES.

COTTON. ONE DOT = 1000 ACRES.

RAINFALL.

KHARIF-SEASON ONE DOT = 40 CENTS.

RABI-SEASON ONE DOT = 40 CENTS.

HOT-WEATHER ONE DOT = 40 CENTS.

BELGAUM DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

NOT LIABLE TO FAMINE.
LESS LIABLE TO FAMINE BUT WITH FREQUENT SCARCITY.
VERY LIABLE TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1918-19.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1920-21.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

NUMBER OF CATTLE.

1909-10

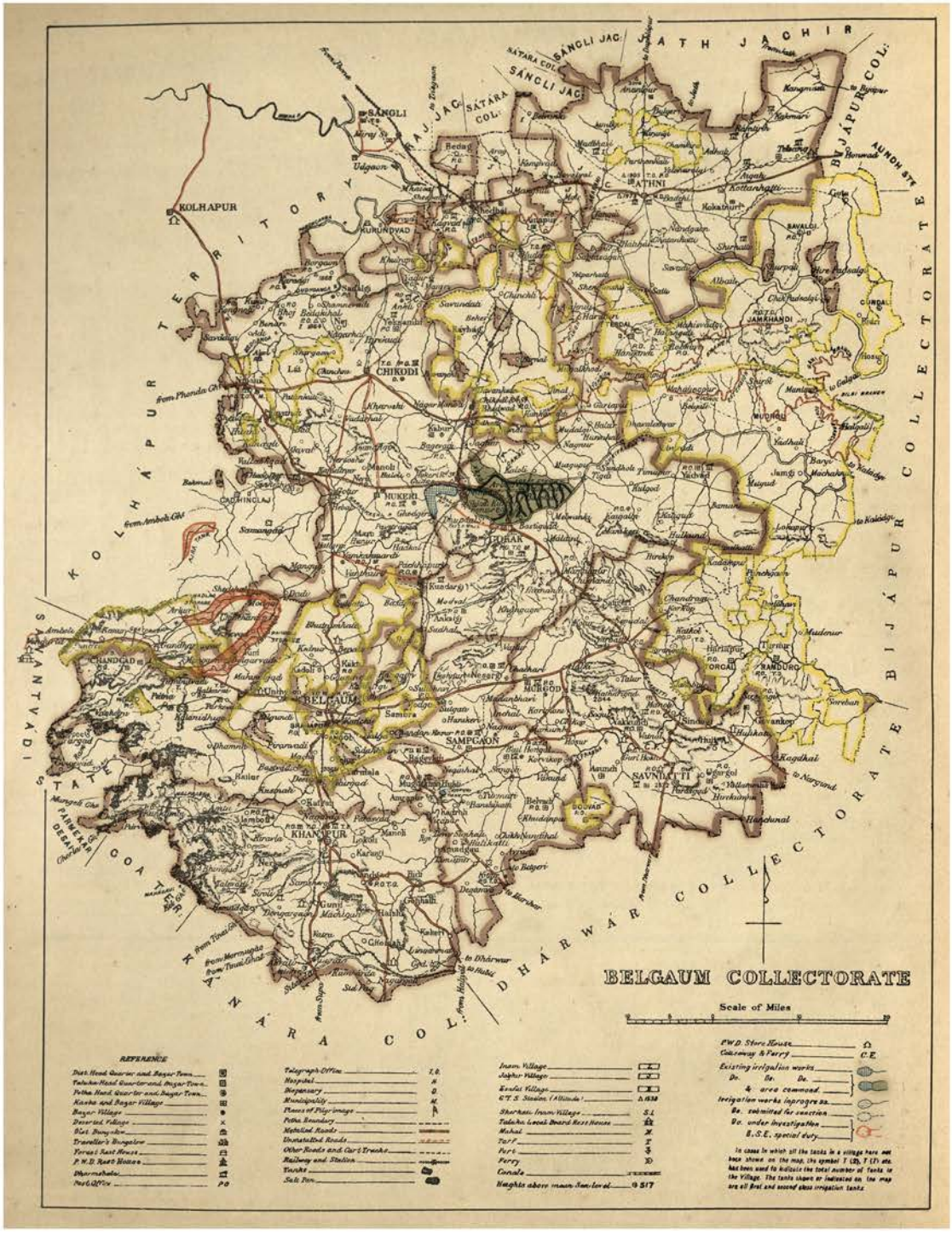
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


BELGAUM COLLECTORATE
Scale of Miles
REFERENCE
Dist. Head Quarter and Bazar Town
Taluka Head Quarter and Bazar Town
Petha Head Quarter and Bazar Town
Kasba and Bazar Village
Bazar Village
Deserted Village
Dist. Bungalow
Traveller's Bungalow
Forest Rest House
P.W.D. Rest House
Dharmshala
Post Office
Telegraph Office
Hospital
Dispensary
Municipality
Places of Pilgrimage
Petha Boundary
Metalled Roads
Unmetalled Roads
Other Roads and Cart Tracks
Railway and Station
Tanks
Salt Pan
Inam Village
Jaghir Village
Konfat Village
G.T.S. Station (Altitude)
Sherkati Inam Village
Taluka Local Board Rest House
Mahal
Tarf
Pert
Ferry
Canals
Heights above mean Sea level
P.W.D. Store House
Causeway & Ferry
Existing irrigation works
Do. Do. Do.
& area commanded
Irrigation works in progress
Do. submitted for sanction
Do. under investigation
B.S.E. special duty
In cases in which all the tanks in a village have not been shown on the map, the symbol T (2), T (1) etc. has been used to indicate the total number of tanks in the Village. The tanks shown or indicated on the map are all first and second class irrigation tanks.
KOLHAPUR
CHIKODI
BELGAUM
SAMPGAON
KHANAPUR
SAVNDATTI
MURGOD
CHANDGAD
SANGLI
ATHNI
JATH JACHIR
BIJÁPUR COLLECTORATE
DHÁRWÁR COLLECTORATE
KANÁRA COL.
SÁTÁRA COL.
SÁNGLI JAG.
KOLHÁPUR TERRITORY
SAVANTVÁDI STATE
PARMEKAR DESAI
GOA TER.

BELGAUM

POSITION AND AREA

The district of Belgaum lies between 15° 22′ and 16° 58′ north latitude and 74° 2′ and 75° 25′ east longitude and covers an area of 4,614 square miles. It is bounded on the north by the States of Miraj and Jath ; on the north-east by the Bijapur district ; on the east by the States of Jamkhandi, Mudhol, Kolhapur and Ramdurg ; on the south and south-west by the districts of Dharwar and North Kanara, the State of Kolhapur and the Portuguese territory of Goa ; and on the west by the States of Sawantwadi and Kolhapur. The lands of the district are greatly interlaced with those of the neighbouring Indian States and within the district are large tracts of territory belonging to Indian States.

PHYSICAL FEATURES

The country forms a large plain studded with solitary peaks and broken here and there by low ranges of hills. The most elevated portion of the district lies to the west and south along the line of the Sahyadri Hills or Western Ghats. The surface of the plain, slopes with an almost imperceptible fall eastwards to the borders of Bijapur. On the north and east the district is open and well-cultivated but to the south it is intersected by spurs of the Ghats, thickly covered in some places with forest.

RIVERS

The principal rivers are the Krisna flowing through the north, the Ghatprabha flowing through the centre and the Malprabha flowing through the south of the district. From their sources among the spurs of the Western Ghats, these rivers pass eastward through the plain of Belgaum on their way to the Bay of Bengal. They are bordered by deeply cut banks over which they seldom flow. None is serviceable for purposes of navigation.

CLIMATE AND RAINFALL

The moderate heat, the early and fresh sea-breeze and its altitude above the sea make Belgaum pleasant and healthy. The lowest temperature recorded is 53° F. in January while in May it rises to 100° F. The most agreeable climate is found in a tract parallel with the crest of the Western Ghats between the western forests and the treeless east. The cold and dry season lasts from the middle of October to the middle of February, the hot dry season from the middle of February to early June and the rainy season from early June to the middle of October. The heat of April and May causes occasional heavy showers attended with thunder, lightning and sometimes hail. Even in May the nights are cool, almost chilly. Near the *Ghats* the south-west monsoon is very constant and heavy. Farther east it is fitful falling in showers separated by breaks of fair weather. The rainfall at the district headquarters averages about fifty inches. In the east it is as low as twenty-five inches, while at Chandgad in the extreme west, about 103 inches are registered in a year.

SOIL

The soils of the district may be divided into two main classes, the red and the black. The red soils are the result of the decomposition of the iron-bearing rocks. This variety of soil is generally found all along the western border ; it also occasionally occurs in the plain country. This red soil is mostly coarse and poor and the rainfall being plentiful in these western parts the chief products are the early or *Kharif* crops. In parts of Athni, red garden lands are watered from wells.

The black soils are the result of the weathering of trap rocks. The black soil covers most of the plain country and is best suited for the growth of cotton, Indian millet, wheat and gram. In east Gokak it is so rich as not to need fallows. In the north-east of the district bordering on the Don are loamy plains of noted richness. The black soil of the Krisna valley is of most uncertain depth, the waving trap lying sometimes several feet, at other times only a few inches, below the surface. The sandy soil in Chikodi, Gokak and Parasgad does not want much rain but it wants constant enriching and with the aid of manure yields fair crops of cereals, pulse and oilseeds.

CROPS

Jowar, the staple of the district occupying roughly six and a half lakhs of acres, is grown in all parts especially in Athni, Gokak, Parasgad, Chikodi and Sampgaon. *Bajri* with an area of about a lakh of acres is chiefly cultivated in Gokak, Athni, Parasgad and Chikodi talukas. The south-western portion (including the talukas of Belgaum, Khanapur and a part of Sampgaon) being too wet for millets produces rice (area about a lakh of acres) and the coarse hill-grains. Wheat with an area of one and a quarter lakhs of acres is the prominent crop of Parasgad. Chikodi is famous for its sugarcane and fruit and vegetable gardens. Tobacco with an area of nearly forty thousand acres is mostly grown in Chikodi in gardens or on favourable plots near villages or along rivers and streams. Cotton covering about two lakhs of acres is the most valuable crop grown in the district. It is especially important in Parasgad, Athni and Gokak.

CATTLE

Cattle of inferior quality are bred by *Dhangars* in the forest tracts of Khanapur and Belgaum, the majority of better breed being imported from Mysore and other places. Bullocks of various breeds are found in all parts, the strongest and largest being imported from South Kathiawar and the best trotting oxen from Mysore. Of local breeds, the *Nagdi* are the most useful and hardy. Buffaloes do not thrive near the Western Ghats ; but the *Gaulis*, *Hanbars* and *Dhangars* of Sampgaon, Gokak and the eastern tract rear buffaloes of a good type. The so-called *Nagdi* buffaloes are reputed the best. Ponies of small and ugly type are bred locally as also are donkeys and pigs by *Vaddars* and other low-caste Hindus. Sheep of two breeds, the *Kenguri* with a soft red wool and the *Yelga* with white or black, are reared by *Dhangars*, while four varieties of goats are found generally, the best breed being known as *Knisheli*. The total number of cattle is over five lakhs. Of this nearly one-third are plough cattle, nearly as many milch cattle and slightly less than one-third are young stock. Sheep and goats number about two and a half lakhs.

FORESTS

The total forest area in this district is about seven hundred square miles. These forests, besides supplying the various needs of the local villagers, *e.g.*, timber for house-building, fuel, bamboos, agricultural implements, fodder for cattle, etc., help to meet the demands of other districts in respect of timber, fuel, bamboos, charcoal, sandal-wood and *hardas*. The fuel reserves in the Khanapur taluka supply fuel to the Madras and Southern Maratha Railway and to various mills. In times of fodder-famine this district can supply not less than one crore lbs. of grass from the forests. The various operations in the forests provide remunerative work not only to the villagers of the district but also to those of other parts. In times of famine especially, the people from famine-stricken areas can be given well-paid labour on fuel-cutting and fodder work.

IRRIGATION

The only important protective irrigation work in the district is the Gokak Canal which commands about eighteen thousand acres on the borders of the transition and *Desh* Tracts. The system consists of a masonry weir across the Ghatprabha river at Dhupdal and a short main canal of four miles in length taking from the reservoir formed by the weir. The main canal has a branch twelve miles long and distributaries about thirty-five miles. The reservoir has a reliable supply from the Ghatprabha river. The water from this reservoir is also supplied to the Gokak Mills and the M. S. M. Railway. The other irrigation work in the district is the Gaddikeri Tank. This is a small tank irrigating less than five hundred acres. It is dependent on local rain and the supply consequently is not reliable. Other small tanks exceed four thousand in number but many hold little water. In Chikodi and Hukeri where there is an irrigation well to every fifty-seven and forty-five acres of cultivated land respectively, a large area is protected except in years of great drought. In Athni even in years of local drought the Krisna floods are sometimes full and the area commanded covered with luxurious crops.

DRINKING WATER

In the west the rivers and wells yield a sufficient supply of good water but towards the east the wells become brackish and the water-bearing strata lie far below the surface. Except the Krisna which at all times maintains a considerable flow of water, the rivers sink into insignificant streams during the hot season and the supply of water falls short of the wants of the people.

INDUSTRIES

Next to agriculture, hand-loom weaving forms the chief industry of the district. The weavers are generally Lingayats or Musalmans with a small sprinkling of Marathas. Most of the produce of hand-looms is consumed in Belgaum. Simple dyeing and tanning are carried on over the whole district. Gokak town was once famous for its dyers and is still celebrated for its toys,

made both from light kinds of wood and from a peculiar kind of earth. They consist of models of men and gods, fruits and vegetables. Belgaum is noted for working on gold and silver, brass and copper. Lacquered articles and bangles are also manufactured in the district.

TRADE

There is a considerable trade in cloth and silk, the chief exports being rice, jaggery, tobacco and cotton and the chief imports cloth, silk, salt and grain.

COMMUNICATIONS

The Madras and Southern Maratha Railway crosses the district from north to south. At Londa, the line meets the Mormugoa branch by which large quantities of produce are taken to the sea. The district is well-served by roads, of which the chief are the Poona-Bangalore road which runs right through the centre of the district and the Vengurla road leading from Belgaum to the sea through Sawantwadi State. Of late, some improvement has been made in the road communications of the district. Two big unmetalled roads, namely the Darur-Gokak and Telsang-Savalgi, have been partly constructed in the scarcity area. The Belgaum-Saundatti road has been recently metalled and is a Provincial Road now. Elsewhere, some good branch roads have been constructed by the District Local Board. The road from Gokak to the Gokak-Falls Mills has been very useful. If the proposed Athni-Gokak road is fully constructed, the district will be well-served with communications. The M. S. M. Railway runs at present rather too near the most protected tract of the district to give it its full advantage from a famine point of view. The most precarious tracts lie at some distance. If a cross line is ever made either through Athni or Gokak to join the east and west sections of the M. S. M. Railway the railway protection will be satisfactorily complete.

POPULATION AND RELIGION

The population of the district according to the census of 1921 is 952,996 or 206·6 per square mile. Of this, Hindus number 865,834 and include a large number of Lingayats. The Musalmans number 80,292, Christians 6,715, Parsis 121, while all other classes together amount to thirty-four.

LANGUAGES

The vernaculars of the district are Kanarese and Marathi spoken by about sixty-five and twenty-five per cent. of the population respectively. Hindi (Hindusthani) is spoken by 7·5 per cent.

BROAD OCCUPATIONS

Speaking broadly, 682,789 or 71·6 per cent. of the total population are supported by Agriculture. Industry including mines supports 106,121 or 11·1 per cent. Trade inclusive of Transport accounts for 64,678 or 6·8 per cent.; Professions and the Liberal Arts for 14,836 or 1·6 per cent. while the remainder 84,572 or 8·9 per cent. are dependent for their livelihood on miscellaneous occupations.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population according to occupations, and in a few cases according to castes. The figures have been based on the census of 1921 and include both workers and dependents :—

Pasture and Agriculture.—Of the total population of 712,877 supported by pasture and agriculture the majority are ordinary cultivators numbering 530,433. Farm-servants and field-labourers number 100,756 while 47,908 are dependent for their livelihood on income from rent of agricultural land. Herdsmen, shepherds, etc., number 27,983.

Industry.—Of the population supported by industry 34,468 are textile workers or weavers and other workers in cotton, wool, silk, etc., at home and in factories. The wood industry accounts for 13,713 persons of whom 9,881 are carpenters and joiners and 3,590 are basket-makers, thatchers, workers in bamboos, reeds, etc. In the metal industry 4,689 are workers in iron and 460 workers in brass, copper, etc. Potters number 5,762. In the food industry which supports 5,856 persons, the chief among others are rice-pounders and flour-grinders 1,715, grain parchers 749, manufacturers of vegetable oil 896, sweet-meat makers 399, butchers 2,052 and toddy-drawers 697. In the building industry which supports 10,938 persons, excavators, earth-workers and well-sinkers number 2,011; stone cutters and dressers 3,829 and bricklayers and masons 4,277. Of the persons following miscellaneous industries, tailors, shoemakers, washermen and barbers number respectively 4,556, 5,031, 3,393 and 4,953. As all of these earn good wages, they are generally well off.

Trade.—Under this head, the trade in food-stuff ranks first and supports 27,733 persons (excluding those engaged in and supported by hotels). Of this, the grocers and sellers of oil, salt, condiments, spices, fruits, etc., number 18,725 and sellers of milk, butter, fish, poultry number 1,964; the grain and pulse dealers number 4,034, dealers in hay, grass and fodder 223, while the trade in fuel, cowdung-cakes, etc., supports 2,346 persons. The trade in piece-goods and textiles is responsible for the maintenance of 5,169 persons. Traders as a class are quite secure, some of them being well-to-do.

Professional Beggars number 9,122. Some of these are likely to require relief in times of famine.

Depressed Classes.—Among these the Chambhars or shoemakers, Bhangis or scavengers, Mahars including Holiyas and Dheds and Mangs number respectively 7,933, 348, 55,700 and 20,468. Recently, special educational facilities in the form of scholarships, etc., are being afforded to these depressed classes and the question of their social amelioration has come before the public eye. Some of these may need relief in times of famine.

Brahmans.—These number 30,636 and are writers, priests, merchants, Government servants, etc., and are fairly well off.

Musalmans.—They follow various occupations such as butchers, betel-leaf sellers, weavers, etc., and are generally in a fair condition.

Parsis.—They are generally merchants and contractors and are quite secure.

The economic condition of the population has already been detailed under that head, above.

ECONOMIC CONDITION

The population is nearly purely agricultural. Weavers of coarse cotton and woollen cloths are fairly numerous but their welfare is so intimately dependent on the condition of the cultivators that, as elsewhere, they may be classed as dependent on agriculture. In the less protected parts the population is almost all distributed in villages. Athni, Gokak and Saundatti are the only towns, to the east of the transition belt. Recently Bail-Hongal has grown into a big cotton centre with seven cotton-gins and presses.

A large portion of the cultivators are Lingayats and Jains who are industrious, provident and self-dependent. Maratha husbandmen are also numerous. They constitute the bulk of the cultivators in the Chikodi taluka and the Chandgad mahal.

Brahmans and well-to-do cultivators of the district engage largely in money-lending but Marwadis and Gujaratis are numerous.

In the famine tract—Athni, Gokak and Parasgad talukas—seventy-five per cent. of the population are engaged in agriculture. Weavers are found principally in the towns of Athni and Gokak. With a number of bad years during the period 1902-03 to 1913-14 and with the famines of 1918-19 and 1920-21 coupled with the abnormal conditions caused by the Great War the resources of the *rayats* in Athni and Parasgad have been considerably crippled. The trade boom at the end of the war, followed by a natural slump soon after, has also adversely affected the commercial classes. But the co-operative movement with its numerous Societies and Banks has come to the rescue of the *rayats*, at the right moment. The starting of cotton sale societies and other types of societies for the marketting of the produce of the agriculturist, augurs well for the amelioration of the condition of the *rayat*. The various activities of a considerable number of petty money-lenders have already come to a standstill, as a result of the movement. The traders of this tract deal in its chief products—*jowar*, cotton and wheat—and in imports from the adjoining districts chiefly of jaggery and salt. In years of drought, food grains have to be imported.

MIGRATION

There is neither emigration from, nor immigration into this district on a large scale. Only during times of scarcity people migrate from villages towards the industrial centres in search of labour, within the district. Sometimes during famines a few people go from Parasgad taluka to adjacent parts of Dharwar district in search of labour. Except for this there is nothing worthy of note on this point.

LIABILITY TO FAMINE

About one-third of the district including the talukas of Belgaum and Khanapur, is practically immune from great distress induced by drought, for in the south-west portion, in which the above talukas are situated, the rainfall is certain, and a bad season rarely occurs. The talukas depending on the north-east rains are liable to chronic drought. In degree of liability these may be graded as follows : Athni, Gokak, Parasgad. Sampgaon, Hukeri and Chikodi lie in the transition tract and having besides a good soil, enjoy a fair immunity. More than half the irrigation wells of the district are in Hukeri and Chikodi.

RATS, LOCUSTS, INSECT PESTS, ETC.

In 1878-79 and again in 1892-93 rats infested the north and east of the district and did considerable harm to the crops. Insect pests from time to time also cause considerable damage. Locusts did some damage in 1864-65, 1865-66, 1873-74, 1875-76, much in 1878-79 and a little in 1880-81, 1882-83, 1903-04 and 1906-07. A species of grass-hoppers used to inflict much damage

but since 1906 a successful destructive campaign has been carried out by unofficial Agency with the aid of the Agricultural Department and consequently there is little trouble now. No destructive floods have occurred in the district during the last three decades—except in the year 1914 when some damage in parts was done on their account and *tagavi* had to be granted for rebuilding houses.

FORMER FAMINES

In **1876** the rainfall was everywhere deficient and there was practically no rain after August. The maximum number on relief works was forty-three thousand in May 1877 while another eight thousand were being relieved gratuitously.

The famines of more recent years were of much less extent and severity. In **1891** a late and insufficient monsoon resulted in a poor *kharif* crop and a still worse *rabi* outturn. So that in the east and north-east of the district, where the rabi crops are chiefly relied on, relief operations on a small scale were necessary.

In each of the four seasons **1896-97, 1899-1900, 1900-01, 1901-02** the same area was subjected to serious scarcity through deficiency of the late rains. In none of these years, however, was there an entire cessation of agricultural operations and relief measures never approached the magnitude they assumed in the Deccan districts.

In **1905-06** the *Mallad* tract of Sampgaon taluka, some parts of Chikodi and Parasgad and the north-eastern parts of Gokak and Athni were severely affected owing to deficient and unseasonable rainfall. The area affected was nearly 1,862 square miles, that is two-fifths of the whole district. Relief Works were opened and the maximum number on them was eight thousand persons, which was reached in July 1906. The daily average number of persons gratuitously relieved was about four thousand.

In **1911-12,** the talukas of Athni and Parasgad were affected. The total area affected was nearly twelve hundred square miles or about one-fourth of the district. Remissions and suspensions and *tagavi* advances were however found sufficient to meet the situation.

The famine of **1918-19** was severe and was felt all over the district. The sufferings of the people were aggravated by the sudden rise in prices of commodities due to the depreciation of money. Ample work on good wages, however, being available on *Tagavi* works, P. W. D. works, and in Cotton-ginning Factories and forests, no necessity of opening relief works was felt in the year. The distress was also alleviated by the import of Burma rice and Mysore *jowar* and *ragi*, the opening of cheap grain shops and by grants of suspensions, remissions and *tagavi* advances.

In **1920-21** again, severe distress was felt over vast area owing to the capricious and deficient rainfall of the year. The opening of relief works, however, was not found necessary and the measures adopted in 1918-19 were found to be sufficient to meet the situation.

FORECAST OF RELIEF WORKERS

The severest recent famines for which there are details are those of 1918-19 and 1920-21 but no relief works were started during these years. The only last famine during which it was necessary to open relief works was that of 1905-06, when the maximum number of relief workers reached 8,303 with 1,405 dependents in July 1906.

The increase of trade facilities, the spread of the co-operative movement, the high prices of agricultural produce, the increase in the rates of wages of agricultural labourers, liberal grants of *tagai*, etc., etc., have very much reduced the necessity of opening relief works. The fact that no test works were started in any year of scarcity since 1905-06 and the small number of workmen that attended the relief works even in 1905-06 go to show also that there is little likelihood of any necessity for starting relief works on a large scale.

The maximum number for which relief works should be provided is, therefore, comparatively small and may be estimated at 11,000 for the whole district which is made up as follows :—

Chandgad	500
Sampgaon	1,500
Gokak	4,000
Chikodi	2,000
Athni	3,000
Total ..	11,000

The district is not in danger of the severe and widespread droughts of the Deccan.

BELGAUM STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the area area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Net irrigated.	Fallow.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Others.	Total.	Irrigation Abstract, 1922-23. Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Double area cropped with irrigation more than once.	Net irrigated area.
		No.	Acres.	No.	Acres.	No.	Acres.	Total.	No.	Rs.	No.	Acres.		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Belgaum	133	446	70	204	203	644	143,461	225	223,132	193	321,031	95·5	11,868	111,142	75,776	198,786	8,957	91,522	21,786	122,245	..	1,435	9,296	536	1,005	12,272	10,711	..	1	..	1	30	..	1,488	531	..	3	12,286	14	12,274
2	Khanapur	224	602	16	31	240	633	70,592	113	175,865	228	481,849	94·4	6,451	89,546	57,448	153,455	7,116	226,147	14,909	248,172	..	118	3,523	129	436	4,466	5,428	..	..	..	..	..	2	981	13	..	6	6,450	18	6,450
3	Sampgaon	130	392	1	16	140	409	112,901	275	364,403	133	262,340	95·8	5,291	205,242	10,214	220,747	8,530	16,493	16,565	41,583	..	118	3,525	956	692	5,291	3,653	..	..	..	..	..	..	728	128	818	254	..	491	5,468	177	5,291
4	Parasgad	111	533	21	105	132	638	100,266	157	282,735	126	408,048	94·2	885	297,653	38,276	336,814	10,665	32,327	28,238	71,234	..	25	68	792	..	885	51	38	..	..	..	..	..	63	18	223	470	..	146	956	111	885
5	Gokak	86	512	34	158	120	671	128,733	192	183,045	114	429,841	94·5	13,087	276,877	42,745	333,109	6,460	57,178	33,694	96,732	6,685	..	6,626	176	15,487	22,289	1,981	992	1,843	641	2,086	16,550	3,063	13,487
6	Chikodi	66	350	33	145	99	495	161,683	330	267,970	94	309,336	95·6	13,232	209,515	50,834	273,581	7,031	501	28,223	35,755	971	1,909	211	849	258	13,295	1261	1,007	..	540	62	2,892	2,081	4,116	1,542	4	3,230	15,495	2,306	13,295
7	Hukeri	91	244	24	99	115	343	108,680	317	130,212	109	219,569	94·9	6,280	138,751	28,119	173,434	4,360	20,896	20,624	45,880	..	416	209	4,999	1,165	6,789	249	..	379	..	..	252	705	2,976	1,921	..	561	7,049	266	6,789
8	Athni	64	560	19	218	83	778	124,678	160	242,170	79	459,838	95·1	7,252	355,939	63,450	426,681	4,334	1,166	27,657	33,157	..	..	..	8,287	..	8,287	170	..	..	..	..	..	1,269	761	..	701	2,224	569	1,339	..	1,633	8,666	379	8,287
	Total	914	3,635	218	976	1,132	4,611	952,996	206	1,867,535	1,076	2,811,560	95·0	65,259	1,684,649	366,898	2,116,802	57,432	446,230	191,091	694,756	6,782	3,143	18,825	34,188	3,772	66,708	20,605	1,114	2,315	2,987	1,269	7,252	7,143	12,165	7,434	645	8,761	73,034	6,326	66,708

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the area area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Net irrigated.	Fallow.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Others.	Total.	Irrigation Abstract, 1918-19. Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Double area cropped with irrigation more than once.	Net irrigated area.
		No.	Acres.	No.	Acres.	No.	Acres.	Total.	No.	Rs.	No.	Acres.		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Belgaum	132	433	70	204	205	637	136,877	213	223,132	193	318,186	98·8	9,813	109,851	74,711	194,375	12,388	89,598	21,425	123,811	..	..	8,204	399	1,426	10,029	..	..	..	..	..	..	..	8,512	..	1,516	..	10	1,048	19	10,029
2	Khanapur	234	602	16	31	250	633	72,304	114	175,865	231	481,298	99·2	5,240	89,562	70,358	165,721	16,836	218,276	14,955	250,067	..	455	4,445	159	788	5,847	..	..	..	..	..	..	..	1,078	..	3,863	..	6	5,963	116	5,847
3	Sampgaon	139	394	1	16	140	410	117,946	288	364,403	133	262,344	98·9	4,303	197,319	39,483	231,105	8,343	16,391	16,365	41,236	..	..	2,707	1,020	576	4,303	..	..	..	..	..	..	..	2,046	..	2,172	..	822	4,540	237	4,303
4	Parasgad	111	533	21	105	132	638	102,197	160	282,735	126	408,048	94·3	891	265,704	70,291	336,886	10,648	32,548	28,186	71,382	..	25	75	606	..	891	..	..	..	..	..	..	..	107	..	676	..	183	966	75	891
5	Gokak	86	514	34	158	120	672	125,625	184	183,043	114	429,834	93·9	12,196	247,917	23,967	333,080	6,650	57,164	32,849	96,654	6,159	7	..	5,801	229	12,196	..	..	..	..	..	..	..	7,631	..	2,598	..	4,189	14,218	2,522	12,196
6	Chikodi	66	350	33	145	99	495	157,855	320	267,970	94	309,325	93·8	11,130	174,619	86,210	272,427	8,156	500	28,198	36,854	..	..	..	910	644	11,111	..	..	..	..	..	..	..	7,256	..	3,855	..	6,815	18,926	3,278	11,111
7	Hukeri	91	244	24	99	115	343	110,061	321	130,217	110	219,518	96·3	7,023	136,230	30,525	173,778	4,372	20,896	20,464	45,732	..	620	67	5,314	628	7,023	..	..	..	..	..	..	..	2,078	..	4,986	..	1,004	7,409	386	7,023
8	Athni	64	560	19	218	83	778	123,357	158	242,170	79	459,834	95·1	9,858	289,222	127,653	426,733	4,341	1,165	27,595	33,101	..	45	..	11,546	168	11,759	..	..	..	..	..	..	..	5,527	..	4,355	..	1,583	12,511	752	11,759
	Total	914	3,630	218	976	1,132	4,606	943,820	205	1,867,535	1,080	2,808,875	95·2	61,055	1,496,232	552,978	2,110,265	71,728	436,730	190,154	698,612	6,159	1,533	15,507	35,489	4,491	63,179	..	..	2,384	..	..	..	33,295	..	23,172	..	10,590	69,381	6,202	63,179

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Barley.	Ragi.	Maize.	Cumbu-gram.	Kodra.	Other.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Math and Kulthi.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.	Oil Seeds. Sesame.	Linseed.	Castor-seed.	Groundnut.	Safflower-seed.	Niger-seed.	Others.	Total.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Belgaum	15,186	289	42,816	1,721	17,971	491	..	51	..	..	78,525	821	..	..	..	31,864	32,685	3,033	3	224	3,260	16	14	30	1,176	1,489	323	102	8	148	219	111	4,105	5,016	3,145	426	3,571	26,487	152,239	8,807	143,432
2	Khanapur	2,657	383	43,595	95	5,575	..	..	..	..	..	55,273	1,098	..	..	..	13,178	14,288	1,548	..	471	2,031	..	..	..	203	999	307	..	..	..	73	203	..	576	842	73	203	276	20,459	108,476	3,434	97,042
3	Sampgaon	61,977	3,330	18,595	13,584	1,227	726	..	..	..	..	98,738	5,572	..	..	..	43,085	48,657	2,289	32	238	4,091	..	35	..	2,697	818	805	296	154	38	17	..	..	2,473	355	90	4,072	26,824	994	27,778	33,959	219,260	6,662	212,543
4	Parasgad	89,706	18,975	81	64,958	33	85	..	81	..	..	173,746	1,628	..	..	..	38,852	44,472	3,737	25	323	4,085	3	3	..	3,558	222	352	2,590	532	686	9,672	..	..	224	14,066	61,720	853	62,623	..	299,562	1,029	298,538
5	Gokak	130,999	37,400	145	76,955	2,864	2,004	..	662	..	..	251,029	4,290	..	..	..	59,907	64,197	4,085	108	2,406	6,599	111	1,410	1,521	3,785	992	620	11,642	202	488	5,479	..	144	8,511	37,375	1,492	38,867	1,833	359,826	3,477	356,349
6	Chikodi	71,960	18,351	2,326	3,588	1,991	4,664	..	..	..	..	104,881	6,235	..	..	..	34,524	40,759	4,968	786	289	6,043	31,694	5,086	4,132	82	48	204	7,074	2,523	..	443	10,374	17,205	2,694	19,899	11,179	234,043	3,745	230,298
7	Hukeri	50,475	12,411	2,938	290	2,762	1,269	..	378	..	..	70,523	2,636	..	..	..	21,243	23,879	1,968	136	93	2,195	6,481	6,488	8,833	2,978	315	8	81	5,263	1,146	500	..	7,592	9,150	2,431	11,587	4,500	148,562	3,642	145,520
8	Athni	233,629	29,108	312	23,037	91	2,428	..	983	..	..	289,627	14,302	..	..	..	38,513	52,815	7,987	345	377	8,709	440	296	730	1,438	569	118	313	85	1,512	1,321	75	..	10,424	45,984	1,154	45,138	7,705	368,513	565	367,948
	Total	658,587	120,246	110,748	128,816	32,934	16,160	..	2,086	..	..	1,069,577	41,308	..	..	..	231,806	273,114	32,484	1,425	2,215	36,128	39,899	491	40,390	23,574	12,195	2,615	55,244	1,336	15,512	30,048	841	5,376	60,912	109,532	10,202	209,235	110,802	1,856,435	32,750	1,803,685

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Barley.	Ragi.	Maize.	Kodra.	Other.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Math and Kulthi.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugar-cane.	Oil Seeds. Sesame.	Linseed.	Castor-seed.	Ground-nut.	Safflower-seed.	Niger-seed.	Others.	Total.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Belgaum	14,331	248	43,013	1,511	86	17,387	469	20,547	97,792	..	..	692	..	..	..	11,074	11,766	2,710	..	..	2,710	11	1	12	1,125	1,374	89	46	..	39	151	..	5,076	5,401	..	4,729	405	5,134	24,868	150,252	6,209	144,027
2	Khanapur	3,562	260	42,679	54	..	9,633	..	4,805	60,758	..	..	685	..	..	..	4,579	5,464	1,411	..	..	1,411	..	..	..	229	958	166	..	..	229	..	..	..	624	1,250	317	..	492	64,268	1,756	62,479
3	Sampgaon	54,620	2,361	18,363	18,244	..	1,641	63	19,274	114,866	..	..	4,545	..	..	..	6,328	20,868	2,857	..	..	2,861	3	..	3	1,971	1,748	638	158	..	251	2,951	..	..	4,514	..	28,098	880	28,968	29,560	205,366	3,738	201,622
4	Parasgad	85,113	13,471	..	80,143	730	27	25	12,281	154,789	..	..	5,706	..	..	..	17,249	22,955	2,367	32	2,402	4,801	3	3	6	574	266	73	1,412	..	277	6,454	..	1,131	9,985	..	75,822	736	76,563	241	267,074	477	266,597
5	Gokak	147,864	14,078	357	11,731	..	246	276	5,887	180,639	..	..	4,289	..	..	..	13,160	17,449	4,291	1,210	13	1,223	3,464	1,202	669	1,176	..	569	3,312	..	..	582	6,113	..	37,888	1,624	39,562	686	262,716	2,603	260,113
6	Chikodi	66,129	19,379	3,124	2,952	..	..	2,848	4,985	112,535	..	..	5,662	..	..	..	10,762	26,434	3,477	859	4,336	13,236	120	13,359	4,389	5,307	49	17	..	4,138	1,948	..	..	6,154	9,998	..	11,843	1,729	13,572	7,953	193,728	3,543	190,184
7	Hukeri	53,181	12,962	3,718	646	..	211	3,319	1,805	76,100	..	..	2,889	..	..	..	11,967	14,856	1,567	2,665	4,232	8,464	5	4,242	7,317	3,398	202	19	..	2,253	905	..	..	3,179	9,046	552	10,598	6,096	145,185	1,924	143,261
8	Athni	209,552	11,371	..	6,931	556	49	3,774	281	232,884	..	..	5,656	..	..	..	6,006	11,702	5,913	369	6,282	12,564	444	1,468	1,148	1,106	113	..	..	793	3,977	..	256	5,248	..	41,293	1,045	42,338	10,348	311,182	679	311,133
	Total	634,432	74,130	111,692	85,179	1,099	35,380	16,763	94,290	1,052,965	..	..	29,464	..	..	..	101,517	130,981	23,524	2,834	26,358	52,882	408	19,296	20,411	15,491	2,650	2,942	..	8,841	19,687	..	9,044	43,164	..	208,889	8,734	217,623	94,057	1,620,340	20,544	1,599,796

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Bullocks-calves.	Young Stock. Calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 Cattle.	Carts. For passengers.	Carts. For produce and goods.	Carts. Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Belgaum	18,523	5,378	49	32	586	86	12,594	10,243	11,193	7,259	65,977	162	2,818	4,791	10,285	451	262	3,857	855
2	Khanapur	19,073	4,132	37	14	321	287	13,198	6,030	12,630	5,106	60,048	114	226	2,295	8,579	306	30	2,603	6·6
3	Sampgaon	17,624	4,959	37	29	563	104	9,466	16,050	12,163	14,498	74,795	763	17,724	8,561	9,680	417	94	5,468	10·5
4	Parasgad	21,802	1,386	191	55	598	87	10,551	10,199	9,295	7,086	61,843	651	23,218	12,857	8,466	425	140	4,509	25·6
5	Gokak	22,461	9,284	115	48	481	72	13,574	12,681	12,851	9,544	74,805	651	24,654	12,498	10,389	709	74	4,654	27·9
6	Chikodi	26,005	2,984	111	33	620	125	9,126	16,319	9,234	12,470	77,024	852	26,232	14,912	3,461	2,363	297	6,131	14·9
7	Hukeri	18,895	5,566	47	50	196	87	7,512	13,362	8,818	8,181	60,715	480	21,968	8,844	5,251	1,987	211	3,745	12·6
8	Athni	23,331	481	54	37	388	114	15,889	8,708	18,225	7,905	75,132	1,116	28,516	16,256	3,658	1,229	187	3,959	30·5
	Total	167,914	25,190	641	298	3,745	959	91,710	93,593	94,391	72,685	551,118	4,769	174,509	91,014	59,771	7,883	1,216	34,900	17·3

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Bullocks-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 Cattle.	Carts. For passengers.	Carts. For produce and goods.	Carts. Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Belgaum	22,780	6,291	84	58	889	156	15,727	13,352	15,928	10,575	85,840	424	3,840	5,929	12,434	605	764	4,588	9·1
2	Khanapur	22,227	74	10,077	5,962	11,414	5,149	51,541	1,005	274	1,585	109,708	1,458	4,011	263	2,424	10·8			
3	Sampgaon	20,454	47	7,980	14,962	10,214	12,618	67,305	698	16,669	7,978	8,726	421	99	5,171	29·8				
4	Parasgad	21,394	61	9,130	8,655	7,794	5,389	53,854	641	25,982	13,669	8,745	519	112	4,630	26·9				
5	Gokak	22,380	86	9,328	11,501	9,689	8,262	61,228	642	28,679	14,604	9,289	694	99	4,650	24·5				
6	Chikodi	26,499	2,984	111	33	620	125	9,126	16,319	9,234	12,470	77,024	852	26,232	14,912	3,461	2,363	297	6,131	14·9
7	Hukeri	18,895	5,566	47	50	196	87	7,512	13,362	8,818	8,181	60,715	480	21,968	8,844	5,251	1,987	211	3,745	12·6
8	Athni	23,331	481	54	37	388	114	15,889	8,708	18,225	7,905	75,132	1,116	28,516	16,256	3,658	1,229	187	3,959	30·5
	Total	167,914	25,190	641	298	3,745	959	91,710	93,593	94,391	72,685	551,118	4,769	174,509	91,014	59,771	7,883	1,216	34,900	17·3

BELGAUM STATISTICAL TABLES—II.

Water Supply—1922-23.

No.	Taluka.	Government Canals. For irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kuchha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Belgaum ..	..	..	..	..	..	..	738	211	949	3,965	174	349	38	58	100	40	8
2	Khanapur ..	..	..	..	..	..	..	487	15	502	940	108	663	4	48	60	25	69
3	Sampgaon ..	..	..	..	..	..	..	353	64	417	35	4	892	462	243	8	7	12
4	Parasgad ..	..	..	..	3	..	..	204	187	391	414	152	1	109	85	..	4	5
5	Gokak ..	..	1	..	..	..	..	..	..	..	7	27	2,434	155	95	2	4	..
6	Chikodi ..	..	..	..	34	12	..	3,709	344	4,053	316	153	7	22	55	3	6	17
7	Hukeri ..	..	..	..	30	..	5	2,597	615	3,212	171	104	14	2	27	7	1	21
8	Athni ..	..	..	..	..	..	..	3,096	179	3,275	155	22	1	11	35	3	6	3
	Total ..	1	..	..	67	12	5	11,184	1,615	12,799	6,023	839	4,361	808	646	183	90	137

Government Protective Irrigation Works—1922-23.

No.	Name of work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Gaddikeri Tank ..	687	687	450	417	...	...	...
2	Gokak Canal first Section and Storage Works ..	18,668	17,627	17,627	17,627	5,743	2,968	8,711
	Total ..	19,355	18,314	18,077	18,044	5,743	2,968	8,711

Holdings—1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of Holding.	Assessment per Holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Belgaum ..	9,818	4,901	606	91	6	15,422	154,266	9·9	14 6 5	1 6 4
2	Khanapur ..	7,340	5,131	844	83	5	13,403	130,876	9·7	13 0 0	1 4 9
3	Sampgaon ..	11,759	13,578	975	45	..	26,357	207,880	7·9	13 12 10	1 11 2
4	Parasgad ..	7,926	8,565	1,469	72	4	18,036	188,042	10·4	17 9 3	1 8 0
5	Gokak ..	8,339	2,902	1,427	138	14	12,820	180,564	10·2	10 6 5	1 0 2
6	Chikodi ..	13,261	7,344	1,111	84	7	21,807	181,911	8·3	12 4 9	1 8 0
7	Hukeri ..	8,236	4,819	666	41	1	13,764	131,226	9·5	7 9 8	1 3 2
8	Athni ..	5,030	8,326	2,940	478	12	16,786	372,908	16·3	14 6 4	0 14 4
	Total ..	69,799	60,464	10,036	952	33	141,284	1,425,778	10·0	13 2 0	1 4 9

Incidence of Assessment—1920-21.

No.	Taluka.	Fully assessed area. Area.	Fully assessed area. Assessed.	Fully assessed area. Incidence per acre.	Fully assessed area including Alienated Land in Government Villages. Population.	Fully assessed area including Alienated Land in Government Villages. Incidence per head of population including alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Belgaum ..	122,715	1,64,982	1 4 10	143,461	1 9 10
2	Khanapur ..	99,586	1,36,381	1 6 5	70,562	2 8 1
3	Sampgaon ..	160,234	2,95,818	1 12 10	112,901	3 3 2
4	Parasgad ..	167,645	1,95,549	1 2 2	100,266	2 12 6
5	Gokak ..	155,980	1,14,352	0 11 2	128,735	1 6 5
6	Chikodi ..	132,401	1,80,579	1 4 5	1,63,685	1 14 4
7	Hukeri ..	67,226	76,059	1 1 7	108,680	1 1 7
8	Athni ..	241,139	1,81,337	0 11 2	1,24,678	1 9 4
	Total ..	1,147,426	13,44,767	1 3 2	952,596	1 6 4

Government Protective Irrigation Works—1918-19.

No.	Name of work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Gaddikeri Tank ..	687	687	450	417	*377	...	*377
2	Gokak Canal first Section and Storage Works ..	18,668	17,627	17,627	17,627	5,206	3,889	9,095
			* Area under consolidated assessment.					
	Total ..	19,355	18,314	18,077	18,044	5,583	3,889	9,472

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Belgaum	Maximum 1914 ..	..	..	..	0·55	0·49	4·47	42·97	27·02	5·30	1·94	1·89	1·78	86·41
		Minimum 1899 ..	..	..	0·15	3·22	0·96	2·15	4·11	1·86	0·01	1·21	..	..	28·63
		Average ..	..	0·04	0·32	1·81	2·34	3·06	16·34	9·39	2·06	4·78	1·64	0·37	59·55
		Rainfall for 1922-23 ..	..	..	6·14	1·34	3·84	8·69	18·41	6·19	1·27	1·77	2·77	..	50·42
2	Chandgad P.	Maximum 1914 ..	..	..	..	0·55	1·20	13·23	80·69	41·32	12·87	0·43	0·55	1·59	152·41
		Minimum 1880 ..	..	..	..	..	..	7·69	26·56	5·49	2·74	0·50	2·70	..	58·68
		Average ..	..	0·05	0·33	1·45	1·87	21·78	42·10	22·17	7·20	4·80	1·53	0·44	103·85
		Rainfall for 1922-23 ..	..	..	3·75	0·67	1·39	22·96	47·83	21·75	6·70	2·38	5·13	..	112·68
3	Khanapur	Maximum 1914 ..	..	..	0·97	0·83	..	7·38	49·78	38·92	6·61	1·99	1·59	1·24	107·34
		Maximum 1899 ..	..	..	..	4·71	1·91	17·99	71·97	2·65	2·72	2·89	..	..	40·89
		Average ..	0·07	0·06	0·52	1·57	2·29	12·79	24·92	13·62	4·31	4·13	1·51	0·38	66·02
		Rainfall for 1922-23 ..	..	..	1·82	0·92	1·58	8·82	18·13	7·32	1·81	1·73	2·64	..	44·77
4	Sampgaon	Maximum 1914 ..	..	..	..	3·41	1·33	2·31	12·93	12·48	5·04	3·51	2·94	2·22	47·17
		Minimum 1876 ..	..	..	0·33	1·62	0·44	4·59	6·83	1·48	1·95	0·73	..	..	17·97
		Average ..	0·05	0·03	0·68	2·48	0·88	4·44	9·34	3·67	4·14	4·86	1·48	0·40	29·12
		Rainfall for 1922-23 ..	..	0·17	2·40	1·85	2·08	5·01	9·33	3·29	0·79	2·20	3·38	..	30·50
5	Saundatti P.	Maximum 1916 ..	..	..	0·04	0·49	4·02	1·40	14·39	1·87	9·71	5·26	16·76	..	53·99
		Minimum 1915 ..	..	0·15	..	0·48	1·46	1·03	3·98	0·65	2·59	0·66	..	..	13·40
		Average ..	0·08	0·06	0·26	1·29	2·34	2·96	3·25	2·69	5·11	4·02	1·81	0·30	24·17
		Rainfall for 1922-23 ..	..	0·40	2·38	0·27	1·00	1·09	2·91	1·58	0·29	5·67	4·10	..	19·69
6	Murgod	Maximum 1882 ..	1·28	..	0·61	0·83	5·81	6·38	8·56	4·78	5·42	5·67	1·65	..	40·99
		Minimum 1899 ..	..	..	0·37	1·53	1·44	3·91	0·30	0·22	6·02	0·48	..	..	14·27
		Average ..	0·11	0·04	0·38	2·52	4·91	2·96	2·76	3·93	2·76	3·93	1·46	0·42	25·61
		Rainfall for 1922-23 ..	..	..	2·04	0·78	1·72	1·48	3·06	0·78	2·91	3·37	6·70	..	22·84
7	Gokak	Maximum 1916 ..	..	..	..	1·28	2·04	3·79	5·01	1·86	3·91	6·78	8·04	..	37·71
		Minimum 1876 ..	..	0·09	..	0·56	0·56	2·18	2·57	0·47	0·52	..	0·05	..	6·99
		Average ..	0·12	0·03	0·36	1·47	2·38	3·41	2·91	2·61	3·94	5·11	1·67	0·36	24·37
		Rainfall for 1922-23 ..	..	0·14	1·90	0·87	1·70	1·43	2·90	1·53	0·14	4·46	7·68	..	22·75
8	Chikodi	Maximum 1898 ..	..	0·32	0·29	6·74	1·42	3·43	7·21	2·35	7·32	11·32	1·59	0·13	42·12
		Minimum 1876 ..	..	..	1·42	1·22	0·44	4·44	5·50	1·53	0·94	..	..	..	15·49
		Average ..	0·08	0·08	0·31	1·69	2·27	3·86	5·42	3·64	4·22	5·12	1·44	0·32	28·50
		Rainfall for 1922-23 ..	..	0·15	1·35	1·11	1·83	2·96	3·67	2·00	0·29	5·26	4·28	..	22·90
9	Hukeri	Maximum 1914 ..	..	..	..	2·36	2·26	1·89	12·60	13·21	4·96	0·10	2·39	1·85	41·62
		Minimum 1880 ..	..	..	..	..	..	..	2·08	2·90	0·90	7·79	1·73	..	13·31
		Average ..	0·06	0·10	0·43	1·66	2·49	3·83	4·76	3·09	4·09	3·94	1·38	0·50	26·33
		Rainfall for 1922-23 ..	..	..	1·24	2·28	3·17	2·96	4·57	2·54	0·30	2·12	5·57	..	24·75
10	Athni	Maximum 1916 ..	..	..	..	0·37	4·54	1·92	10·32	2·02	8·47	8·77	8·88	..	45·29
		Minimum 1876 ..	..	..	..	0·53	1·09	2·95	1·56	0·43	0·12	0·33	0·06	..	6·80
		Average ..	0·12	0·03	0·41	1·29	2·13	3·13	2·85	2·80	3·58	4·16	1·21	0·29	25·93
		Rainfall for 1922-23 ..	..	0·21	2·12	0·85	0·24	1·26	2·51	0·77	0·79	2·68	6·97	..	18·30

Temperature Details (Belgaum).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		F.	F.	F.	F.	F.	F.	F.	F.	F.	F.	F.	F.
1913	Mean maximum ..	82	87	94	96	93	86	76	75	80	83	84	83
	,, minimum ..	55	60	62	66	67	67	66	66	66	64	59	59
	Absolute maximum ..	85	92	98	100	99	93	82	84	86	87	87	87
	,, minimum ..	52	56	58	58	63	61	63	62	61	59	54	52
1914	Mean maximum ..	82	88	93	93	93	83	74	75	78	84	81	81
	,, minimum ..	57	58	61	64	69	68	67	66	65	65	62	60
	Absolute maximum ..	87	94	96	102	100	94	80	81	84	87	86	84
	,, minimum ..	53	54	54	55	66	64	65	64	61	60	56	50
1915	Mean maximum ..	82	87	90	95	91	86	78	77	80	81	82	79
	,, minimum ..	59	58	62	67	69	69	67	68	66	64	63	56
	Absolute maximum ..	85	90	92	99	96	93	84	85	86	87	87	83
	,, minimum ..	54	52	56	63	67	65	65	63	63	59	57	48
1916	Mean maximum ..	82	87	94	96	94	77	80	76	78	80	77	78
	,, minimum ..	57	58	63	66	68	67	67	66	65	65	62	55
	Absolute maximum ..	85	93	98	100	101	81	85	85	88	85	82	82
	,, minimum ..	53	50	59	58	62	64	65	64	59	59	57	48
1917	Mean maximum ..	81	85	91	94	91	78	76	77	77	80	80	80
	,, minimum ..	56	58	61	64	65	67	66	66	66	64	64	55
	Absolute maximum ..	85	91	94	98	97	91	83	82	83	84	83	84
	,, minimum ..	50	48	53	59	60	65	65	63	56	56	50	50
1918	Mean maximum ..	80	86	91	96	88	80	79	76	80	87	83	82
	,, minimum ..	54	56	62	64	68	67	65	66	64	64	59	59
	Absolute maximum ..	84	93	95	100	99	86	84	79	84	91	91	86
	,, minimum ..	52	55	58	60	65	64	64	63	60	58	60	50
1919	Mean maximum ..	84	90	93	97	92	79	76	75	79	82	81	80
	,, minimum ..	59	60	62	67	68	68	67	67	66	64	64	58
	Absolute maximum ..	87	92	97	101	97	91	81	77	83	86	84	83
	,, minimum ..	51	53	57	60	65	65	63	62	62	62	59	52
1920	Mean maximum ..	82	88	94	95	92	81	74	76	80	84	85	85
	,, minimum ..	59	59	63	67	66	68	67	67	65	66	64	58
	Absolute maximum ..	86	93	97	99	97	91	82	80	85	87	88	88
	,, minimum ..	52	52	59	63	64	65	66	64	62	61	58	52
1921	Mean maximum ..	86	89	96	96	95	82	78	75	77	84	80	82
	,, minimum ..	59	58	64	68	68	68	68	66	65	65	59	57
	Absolute maximum ..	92	93	100	100	102	93	85	80	88	85	85	85
	,, minimum ..	53	54	59	63	65	66	64	59	60	53	53	53
1922	Mean maximum ..	83	88	94	95	94	82	74	75	78	84	81	81
	,, minimum ..	59	60	64	69	69	68	66	65	65	64	60	55
	Absolute maximum ..	88	92	98	100	101	91	78	78	86	87	87	83
	,, minimum ..	52	54	54	66	64	66	65	65	60	58	54	52

Prices—Pre-war Normal.

No.	Taluka.	Price in Lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur(dal).	Wages per Diem per Man. Jawari Bajri. Dry grain.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.						Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Belgaum ..	26	26	17	16	116	91	0 10 6	0 4 4	0 3 3
	Non-headquarter towns								
2	Chandgad P. ..	...	...	18	14	...	150	0 6 0	0 2 9	0 2 ...
3	Khanapur ..	26	...	18	15	...	107	0 8 10	0 3 4	0 3 3
4	Sampgaon ..	28	27	16	15	142	...	0 10 08	0 3 5	0 3 4
5	Saundatti P. ..	28	27	...	15	128	...	0 8 9	0 4 6	0 3 3
6	Murgod ..	27	28	...	15	201	...	0 9 9	0 4 5	0 3 10
7	Gokak ..	26	28	...	16	98	...	0 11 1	0 4 4	0 3 8
8	Chikodi ..	25	26	...	16	284	65	0 8 8	0 4 4	0 3 6
9	Hukeri ..	24	26	15	16	92	...	0 8 0	0 3 6	0 3 4
10	Athni ..	28	29	...	16	60	...	0 8 10	0 4 5	0 4 3
	Average of the non-headquarter towns .	26	27	17	15	114	113	0 8 10	0 4 2	0 3 8

Prices—1922-23.

No.	Taluka.	Price in Lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur(dal).	Wages per Diem per Man. Jawari Bajri. Dry grain.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.						Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Belgaum ..	20	19	10	10	...	36	1 2 5	0 10 2	0 8 2
	Non-headquarter towns								
2	Chandgad P. ..	...	...	12	8	...	50	0 12 8	0 5 11	0 3 8
3	Khanapur ..	18	...	11	9	22	28	1 5 8	0 10 10	0 5 10
4	Sampgaon ..	22	19	10	9	60	...	0 14 8	0 9 9	0 7 8
5	Saundatti P. ..	21	19	...	9	...	...	1 0 0	0 7 2	0 5 7
6	Murgod ..	21	22	...	9	82	...	0 13 4	0 8 0	0 6 0
7	Gokak ..	23	22	...	9	116	...	1 0 0	0 7 10	0 6 10
8	Chikodi ..	23	...	...	9	...	...	1 0 8	0 8 0	0 6 8
9	Hukeri ..	21	21	9	10	...	...	1 0 0	0 8 0	0 6 0
10	Athni ..	24	19	...	8	41	...	1 0 0	0 6 0	0 5 9
	Average for the period.									

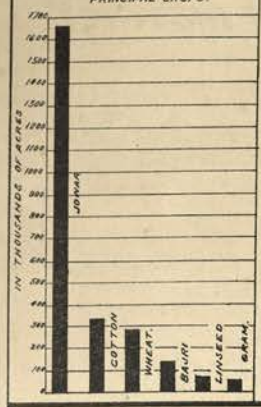
Famine Relief—Average Daily Number 1911-12, 1918-19 and 1920-21.

Month.	1911-12. Relief workers.	Dependents.	Gratuitously relieved.	Total.	Price in Lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief workers.	Dependents.	Gratuitously relieved.	Total.	Price in Lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief workers.	Dependents.	Gratuitously relieved.	Total.	Price in Lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No	Lbs.	Lbs.
January ..																		
February ..																		
March ..																		
April ..																		
May ..																		
June ..																		
July ..	No Relief Works were opened in any of these years.																	
August ..																		
September ..																		
October ..																		
November ..																		
December ..																		

BIJAPUR DISTRICT

BIJAPUR DISTRICT.

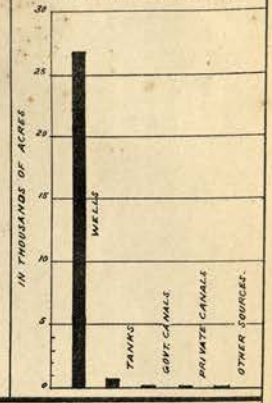
RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER IRRIGATION.

ONE DOT = 100 ACRES.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



AREA UNDER CROPS.

JOWAR. ONE DOT = 1000 ACRES.

BAJRI. ONE DOT = 1000 ACRES.

WHEAT. ONE DOT = 1000 ACRES.

GRAM. ONE DOT = 100 ACRES.

SAFFLOWER. ONE DOT = 100 ACRES.

COTTON. ONE DOT = 1000 ACRES.

KHARIF-SEASON ONE DOT = 10 CENTS.

RAINFALL.

RABI-SEASON ONE DOT = 10 CENTS.

HOT-WEATHER ONE DOT = 10 CENTS.

BIJAPUR DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

NOT LIABLE - TO FAMINE.
LESS LIABLE TO FAMINE - BUT WITH FREQUENT SCARCITY.
VERY LIABLE TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.

CROP OVER 60% OF NORMAL.
CROP 33 TO 60% OF NORMAL.
CROP UNDER 33% OF NORMAL.

INTENSITY OF FAMINE IN 1918-19.

CROP OVER 60% OF NORMAL.
CROP 33 TO 60% OF NORMAL.
CROP UNDER 33% OF NORMAL.

INTENSITY OF FAMINE IN 1920-21.

CROP OVER 60% OF NORMAL.
CROP 33% TO 60% OF NORMAL.
CROP UNDER 33% OF NORMAL.

NUMBER OF CATTLE.

1909-10

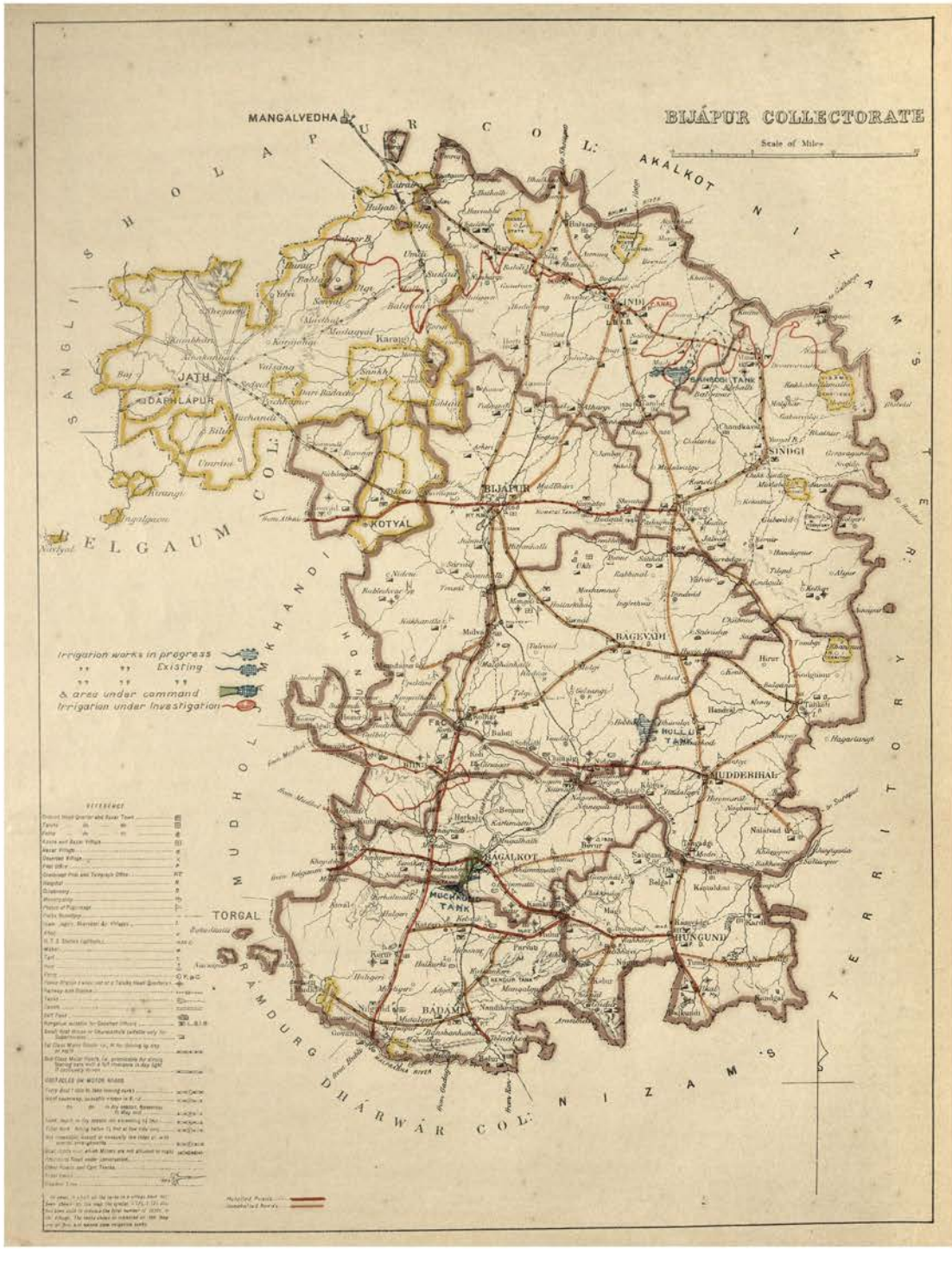
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


BIJÁPUR COLLECTORATE
Scale of Miles
MANGALVEDHA
AKALKOT
JATH
DAPHLÁPUR
INDI
SINDGI
BIJÁPUR
KOTYAL
BAGEVADI
MUDDEBIHAL
BAGALKOT
HUNGUND
BADAMI
TORGAL
Irrigation works in progress
Existing
& area under command
Irrigation under investigation

BIJAPUR

POSITION AND AREA

The district of Bijapur lies between 15° 49′ and 17° 29′ north latitude and 75° 19′ and 76° 32′ east longitude and covers an area of 5,669 square miles. On the north it is separated by the river Bhima from the district of Sholapur and the State of Akalkot; on the east and south-east it is bounded by the Nizam's Dominions; on the south the Malprabha river divides it from the district of Dharwar and the State of Ramdurg; and on the west it is bounded by the States of Mudhol, Jamkhandi and Jath. This district was called the Kaladgi district till 1885 when the headquarters were removed to Bijapur and the district named 'Bijapur'. The district is very compact. There are only a few tracts of non-British territory within its borders.

PHYSICAL FEATURES

The Gazetteer divides the district into three belts—the northern belt comprising the country north of the latitude of Bijapur; the central belt including the tract south to the Don river and the southern belt consisting of the portion south of the Krishna.

The northern belt is a tract of elevated billowy upland, treeless, gently rounded, and falling into narrow valleys to which cultivation is chiefly confined. The soil is disintegrated trap, very shallow on the uplands but good in the valleys, where also facilities for well irrigation are considerable. The central belt contains the rich Don valley, the grainery of old Bijapur. The level sweeps of black soil are wider and in many parts there is a true plain. The rich alluvial plain of Krishna, which divides the trap from the sand stone, forms the southern belt. This belt of country is crossed by two low ranges of hills and differs very greatly from the rest of the district. The richest portions are to be found in east Bagalkot, south-west Hungund and in the narrow strip of the Malprabha valley, south of the Badami hills.

The district is well supplied with rivers and water-courses. Of these the most important are, beginning from the north, the Bhima, Don, Krishna, Ghatprabha and Malprabha, all large rivers flowing throughout the year, and excepting the Don, impassable in the rainy season except by boats. There are also many small streams. The water of the Don is too salt to drink, but the other large streams supply drinking water of fairly good quality.

CLIMATE

Excluding Badami, where there is much low bushy vegetation, the climate is dry and healthy. March and April are the hottest months, when the thermometer sometimes rises to 109° F. In May the intensity of the heat is slightly relieved by occasional thunderstorms and days of cloudy weather.

RAINFALL

The rainfall is extremely irregular both in amount and distribution. The rain is brought by both monsoons. The south-west monsoon rains begin in June, but occasional showers preceded by dust storms and accompanied by thunder fall in March to May. These showers are useful for preparing the land for early crops, but are not so important as in the *Mallad* tract of Dharwar. In July the rainfall is uncertain and very varying. In August it is heavier and there is a further increase in September and October when the north-east monsoon sets in. The rainy season ends in November. The supply from the north-east monsoon is variable. In some years it fails. In others it furnishes a valuable addition to the south-west rainfall. In exceptional seasons the north-east rains reach the Sahyadris. Passing showers and sometimes heavy rains come in December, January and February.

CROPS

The crops of the northern belt are *bajri* and late *jowar* with irrigated wheat and cotton. The chief oil-seeds are sesamum, lin-seed and safflower.

In the central belt, rich dry crop wheat and late *jowar* inter-sown with safflower and lin-seed cover the land. Lin-seed is also taken alone. Cotton is a large staple in this belt.

Except in the uplands of the centre of the southern belt, the soil produces luxuriant dry crop wheat, *jowar* and cotton. This belt resembles the black soil plains of the Ron taluka in Dharwar.

In a normal year, *jowar* occupies over sixteen lakhs of acres, wheat two and a half to three lakhs and *bajri* one and a quarter to one and a half lakhs of acres. Rice is an insignificant crop rarely covering over two and a half thousands of acres. It is usually grown in embanked fields in the northern belt and in some hilly tracts of the Hungund and Badami talukas in the southern belt. Among pulses, *tur* with an area of thirty to forty thousand acres and gram with an area of fifty thousand acres and over, are the most important. *Mug, udid, math* and *kulith* are also grown extensively. Under oil-seeds safflower is by far the most important occupying sometimes over one lakh of acres. Lin-seed having, under suitable rains, over seventy thousand acres under it follows next. Cotton is the most valuable crop of the district and is grown to the extent of over three lakhs of acres. There is little sugarcane grown in the district.

CATTLE

Though there is normally just enough of grazing and though the climate is favourable for rearing animals, imported cattle are generally preferred to the local breeds. The finest cattle bred locally are found in villages bordering the Krishna river. The best imported bullocks come from Bangalore, Bellari, Chitaldrug and other places in Madras. Of buffaloes there are two kinds: *Gaularu* or *Gaulis* and the ordinary *Mhais*. The *Gaularu* buffalo comes from Nagpur. It has very long horns and is much stouter and gives better milk than the local buffalo. Sheep include three varieties: Muralgini, Patalgini and Batgini, the best being found in the Bijapur taluka. There are two kinds of goats: the Kengori which comes from Madras and the Kunyi or Gujarat goat, famous for the quantity and quality of its milk. The district is a poor place for horse breeding; but in many parts, particularly in the Indi and Sindgi talukas, ponies of hardy type are found.

FORESTS

The forest area in this district is roughly 248 square miles. The forest is scrub and unimportant and yields only fire-wood for local use. The soil being rocky the growth of grass is scanty. When the rainfall is normal there is just enough grass for local cattle. In times of famine cattle are sold for a nominal price or removed to other districts, unless timely supply of fodder is made available from elsewhere. In times of *famine*, selected exploited area closed against grazing for regeneration are opened for the season as a temporary relief. But such areas not being large the grass supply in them is consumed in a short time. The district has therefore in times of famine to depend upon *Kadbi* supply from outside.

IRRIGATION

The only Protective Irrigation Work of any importance is the Muchkundi Tank. This is dependent on local rain for its supply. The *rayat* in the Bijapur district have no confidence in tank irrigation owing to the uncertainty of water supply in the tank. To encourage irrigation under this tank Government allowed water free and yet nobody took advantage of it. It is only from the year (1921-22), after many demonstrations by the Public Works Department, that the *rayats* have begun to realise the advantage of irrigation and applications for perennial and *rabi* irrigation are now received from them. About 100 acres are now being irrigated. The bund of Kendur tank in Badami taluka is being repaired. Garden cultivation is likely to increase under this tank. If the bunds of the Parvati and Arkeri tanks are properly repaired an appreciable area will come under irrigation.

DRINKING WATER

With regard to the general condition of the drinking water supply in different tracts of the district, it may be remarked, that the people of the villages on the banks of the rivers are well off in this respect. As regards *nallas*, they run dry in summer and people dig temporary *gunds*. In some villages there are wells constructed either by the District Local Board or by private charity. There is a certain amount of water supply from tanks. Recently, owing to deficient rainfall water scarcity is being keenly felt and in years of very defective rainfall something like a water-famine may seriously threaten the district.

INDUSTRIES

The chief industries in the district are cotton ginning and pressing, weaving and quarrying.

Weaving of *saris* at Ilkal and Bagalkot and *khans* at Guledgud, Gudur, Amingad, Kamatgi, Sulibhavi and Kerur is carried on a large scale and affords much work to the weaving classes. The articles produced find good markets in the Karnatak and in the Central and Northern India. There are also industries of coarse country cloth and blankets (*kamblis*). Quarrying is chiefly done in the Badami taluka. Bangles of primitive type are prepared in Gudur in the

Hungund taluka and at Yadhalli in the Bilgi peta. Brass and copper pots are prepared at Gudur.

TRADE

The chief articles of import are piece-goods from Sholapur, rice, cocoanuts, and salt from the coast, betel-nuts and spices from Kanara and molasses from Belgaum. The chief exports, as already noted, are cotton and silk cloth, blankets, cotton-yarn and copper pots.

COMMUNICATIONS

A branch of the Madras and Southern Maratha Railway opened in 1885 runs through five talukas of the district which it traverses from north to south connecting with the Great Indian Peninsula Railway at Hotgi and the main line of Madras and Southern Maratha Railway at Hubli. There are feeder roads connecting the principal villages and towns with the railway and through roads coming from and passing out to other districts, such as Sholapur-Bellary, Sholapur-Hubli, Satara-Bijapur and Belgaum-Ilkal roads. A few more inter-district roads have also been recently undertaken while a few causeways have been constructed over the main rivers. Causeways over the Bhima and Malprabha, if constructed, will facilitate communication with the districts of Sholapur and Dharwar. The communication facilities of the district are very satisfactory.

RELIGION

The total population of the district, 796,876, is made up of 699,644 Hindus, 96,125 Musalmans, 1,077 Christians and 30 Parsis.

LANGUAGE

Kanarese is the prevailing vernacular and is spoken by over eighty-one per cent. of the population. About ten per cent. speak Hindi (Hindusthani); three per cent. Marathi and two per cent. Rajasthani (Marwadi). Marathi is confined to the large towns and the Indi and Sindgi talukas which formerly formed part of the Sholapur district. Hindusthani as well as Kanarese is spoken by most Musalmans but, as in Dharwar, some only know the latter. Hindusthani is also known by other classes on the borders of the Hyderabad State.

BROAD OCCUPATIONS

Broadly speaking Agriculture supports 563,714 individuals or 70·7 per cent. of the total population. Industry including mines affords the means of livelihood to 101,466 persons or 12·7 per cent. Trade and Transport support 56,819 persons or 7·1 per cent., Professions and the Liberal Arts 12,593 persons or 1·6 per cent. while the remainder 62,284 or 7·8 per cent. have to follow various other occupations for their livelihood.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district mainly according to occupations but in a few cases according to castes. The figures are based on the census of 1921 and represent both workers and dependents.

Pasture and Agriculture.—Of the total population of 585,108 supported by pasture and agriculture ordinary cultivators number 366,563; farm servants and field labourers 169,126 and persons living on income from rent of agricultural lands 26,427. Herdsmen, shepherds, and goat-herds 19,902 are the most numerous of the class supported by pasture. The economic condition of these classes is dealt with separately under that head.

Industry—The textile industry comprising of weavers and other workers in cotton, wool, silk, etc., at home and in factories who number 44,881, stands first under this head. Carpenters and joiners 7,653, and basket-makers 2,462 make up the wood-industry. In metal industry workers in iron 2,651 and those in brass, copper, etc. 192 are the most important. Potters number 3,262. In the food industry, rice-pounders and flour-grinders 1,245, grain-parchers 591, manufacturers of vegetable oils 615, sweet-meat makers 631, butchers 656 and toddy-drawers 725 deserve a mention. In the building industry the most numerous are brick-layers and masons 5,957 and stone-cutters and dressers 5,442. Excavators, earth-workers and well-sinkers number 1,318. Tailors 2,916, washermen 2,018, barbers 4,514 and shoe-makers 6,147 are the most important of the persons following miscellaneous occupations. Most of the classes noted above get sufficient work on good wages nowadays and their condition is generally fair.

Trade.—The trade in food stuffs ranks first supporting 22,152 persons. Of these grocers and sellers of oil, salt, condiments and spices number 16,092, grain and pulse dealers 1,784, sellers of milk, butter, fish, poultry, etc. 2,417, and dealers in hay, grass and fodder 508. The trade in fuel, such as fire-wood, cow-dung cakes, etc., supports 4,229 persons. The trade in piece-goods maintains 5,392 individuals. Traders as a class are generally secure from famine.

Professional Beggars (10,741).—These do not receive their customary alms in times of great scarcity but owing to their migratory habits they may tide over a famine year.

Depressed Classes.—These include the Mahars, Holiyas and Dheds 34,936 who are mostly labourers, Mangs 33,899 who are chiefly rope-makers, watchmen, etc., and Chambhars 5,470 who work in leather. Some of these may need relief in a year of acute distress.

Brahmans (23,699).—They are mostly priests, writers, traders, money-lenders, Government servants and land-holders and as a class are well off.

Musalmans (96,125).—In the villages they are mostly husbandmen but in towns they are servants, constables, labourers, etc. They are fairly off but in famine times a few of them may need help.

Christians (1,077) are mostly well off.

Parsis (30) are very few.

ECONOMIC CONDITION

The population of the district is almost entirely dependent on agriculture. A few people are engaged in crafts or industries. Weaving industry may be mentioned as one of growing importance in the district. In Hungund, Badami and Bagalkot talukas silk cloth of fine quality is produced. Elsewhere cotton cloths and woolen country blankets are made. The agriculturists lead a simple life. They usually keep a year's supply of corn in store. At present on account of the flood of 1916 which damaged corn in pits, etc., and on account of successive bad years it is thought that very few have any considerable stock of grain. Their resources are crippled and many of them are in debt. Loans from Co-operative Credit Societies, *tagai* and suspensions of land revenue have come to their help but it will be long before they will recover from the effects of famine. The agricultural stock has also suffered much.

There has been no industrial development worth the name to engage people and relieve the distress. Besides, if a big industrial town were to be developed in the district the growth of such a town would possibly not greatly affect the need for relief. The establishment of large industries would probably mean importation of labour from outside; it would not necessarily take off the labour supply from agriculture. In times of famine such industries, having already their own staff of workmen, and perhaps even having to reduce their numbers, could hardly be looked upon to provide employment for agricultural labour.

MIGRATION

There is a distinct tendency of the people to migrate in times of famine and scarcity. This was particularly marked in the severe scarcity in Sindgi taluka in the year 1922-23. Generally the people migrate to the neighbouring district of the Mysore State, the Mallad districts and H. E. H. the Nizam's Territory.

LIABILITY TO FAMINE

The whole district is liable to famine except parts of Badami and Hungund. Portions of alluvial lands along the banks of the rivers Krishna, Ghatprabha, Malprabha and Don are partially protected.

The liability to famine is apparently due to the fact that the district lies between the areas exposed to the influence of the two monsoons. It gets only the "fag end" only of both. The remedy might be found to some extent in planting trees on a large scale. There are facilities for protection if one or two of the rivers were bunded and canals cut. The proposed extended Gokak Canal will command a part of the Bagalkot taluka. The area protected by tanks is insignificant. Irrigation wells have increased but are not numerous. There is still some scope to sink wells by the side of *nalas* and the river Ghataprabha.

FORMER FAMINES

How complete the failure of rain was in **1876-77** can be seen from the rainfall table. The whole district was famine striken.

In **1891** owing to the late commencement and early cessation of the monsoon, both the early and late crops failed. The distress which was at its height in April 1892, though general, was never intense.

In **1896** the total fall was everywhere far below the average and both the early and late rains failed. The extent of the crop failure was even greater than in 1876-77 and the outturn was variously estimated at from 1 to 4 per cent. of the normal. The want of useful rain in July and August 1897 prolonged the distress and these months with September constituted the period of greatest intensity of the famine.

In **1899** the July and August rains failed, and after a copious downpour in September and light rain in October no more rain fell. Real famine was, however, confined to the Indi, Sindgi and Badami talukas. The crop outturn was 8 per cent. compared with an average year.

In **1900** the rainfall was very variable, but the crops were saved from absolute ruin by casual showers. Want of rain after October led to extensive loss of *rabi* crops. The outturn was thirteen per cent. of the average.

In 1901 the deficiency of the rainfall from August onwards necessitated continuance of relief operations till October 1902. In this season the crops were estimated at four annas or nearly thirty per cent. of the normal.

In **1905** rain fell at the beginning of the season and the *kharif* crops were sown in anticipation of more. July rains were light and partial and *kharif* sowings were not finished, till the rain in August which somewhat helped the early sown crops. The six weeks' drought which followed, however, had a very disastrous effect and a large proportion of the crop in light soil was lost. *Rabi* sowings were made only after the October rains but there being practically no rain later on, these crops also suffered considerably.

In **1911** owing to deficient and capricious rainfall the *kharif* crops yielded a very poor outturn and the *rabi* crop did not fare much better.

In **1918** there were *ante*-monsoon showers or thunderstorms in May but none in June. From this month until September the rainfall was scanty and irregular. Kharif was sown in a small area and that too was not good. *Rabi* rains started in September, with great promise except in the north-west portion of the district. The rains, however, did not continue and there was a long break till November except in some parts. The outturn of *rabi* crops was fair in Indi taluka and south of Krishna and in the Don valley. Elsewhere they were very poor. The rain was surprisingly local so much so that good and poor fields co-existed in the same village in patches. A severe epidemic of the influenza broke out in September and lasted for about two months. Owing to its after effects there was a shortage of labour and agricultural operations were seriously hampered with the result that a number of fields were left unsown.

In **1920** except in Badami taluka, *kharif* rains were neither timely nor sufficient. The *rabi* rains started in September but owing to absence of further falls the crops failed except in Badami taluka.

FORECAST OF RELIEF WORKERS

Judging by the very recent experience of the famine of 1920-21 the maximum number of persons likely to come to work on relief works, in a year of partial failure of crops, may be estimated to be thirty thousand ; in a year of total failure of crops from sixty to seventy thousand ; and when the neighbouring tracts are also affected up to a hundred thousand. The non-workers will similarly be ten, twenty and thirty thousand respectively.

BIJAPUR STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on col. three area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Not available for cultivation. Total.
		No.		No.		No.		No.	No.	Rs.	No.			Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Bijapur ..	92	839	10	68	102	907	119,120	131	1,95,238	103	572,865	93·0	3,970	401,441	111,910	517,321	19,378	1,700	34,469	55,547
2	Indi ..	111	799	11	79	122	886	90,167	107	1,05,803	122	534,960	100·0	2,745	419,201	70,558	502,507	4,423	..	28,030	32,453
3	Sindgi ..	196	763	14	47	150	810	87,929	109	2,23,635	150	518,253	100·0	4,633	387,321	99,586	492,040	3,227	..	22,986	26,213
4	Basavadi ..	112	734	9	30	121	764	84,111	114	2,32,457	121	488,953	100·0	3,043	431,289	49,291	483,623	3,549	2,938	24,858	31,345
5	Muddebihal ..	124	490	30	139	154	569	80,754	142	1,60,716	154	364,396	100·0	683	314,194	24,941	339,818	2,267	27	22,284	24,578
6	Bagalkot ..	140	591	34	133	174	664	122,823	179	2,32,607	173	496,570	99·8	1,117	323,053	22,314	346,484	1,804	59,199	27,087	90,090
7	Badami ..	150	511	32	104	182	615	99,167	161	1,57,826	180	391,632	99·5	1,025	215,627	59,504	276,156	7,947	88,222	18,807	115,476
8	Hungund ..	148	451	21	70	169	521	102,514	197	1,99,569	169	333,309	100·0	617	275,052	13,620	289,289	1,300	24,296	18,424	44,020
	Total ..	1,013	5,058	161	650	1,174	5,708	796,876	140	1,602,884	1,169	3,640,941	99·6	27,836	2,741,669	451,724	3,221,229	46,389	176,878	196,445	419,712

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Bijapur ..	..	..	..	4,064	..	4,064	21	..	537	132	..	367	1,389	120	1,229	27	216	4,538	474	4,064
2	Indi ..	..	65	695	11,988	..	12,748	121	273	906	9,201	31	319	580	135	904	442	230	13,659	911	12,748
3	Sindgi ..	..	..	..	4,633	..	4,633	39	299	..	83	..	192	2,356	53	882	..	296	4,509	172	4,633
4	Basavadi ..	..	..	..	3,043	..	3,043	..	..	727	..	..	..	1,816	..	577	100	949	3,527	534	3,043
5	Muddebihal ..	..	..	3	686	..	689	6	3	96	9	..	..	280	..	..	..	145	689	6	683
6	Bagalkot ..	..	..	220	..	..	220	..	..	..	12	..	..	1,350	..	50	969	41	1,352	240	1,117
7	Badami ..	..	28	..	1,108	..	1,136	121	..	..	..	..	..	1,000	..	44	380	31	1,025	..	1,025
8	Hungund ..	..	..	10	558	..	568	11	..	55	12	..	..	458	..	..	89	69	669	52	617
	Total ..	..	93	928	26,080	..	27,030	319	575	2,321	9,449	31	878	9,229	308	3,686	1,028	1,700	30,169	1,992	28,177

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on col. three area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Not available for cultivation. Total.
		No.		No.		No.		No.	No.	Rs.	No.			Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Bijapur ..	92	839	10	68	102	907	122,430	135	1,94,015	100	572,866	98·7	3,818	347,388	166,225	517,431	19,323	1,700	34,412	55,435
2	Indi ..	111	799	11	79	122	889	96,829	117	2,06,671	122	554,960	100·0	6,773	399,907	95,705	502,385	4,576	..	27,996	32,572
3	Sindgi ..	196	763	14	47	150	810	96,084	118	2,23,341	150	518,046	100·0	3,360	401,034	87,788	492,182	3,585	..	22,479	26,064
4	Basavadi ..	112	734	9	30	121	764	109,729	144	2,31,776	121	488,954	100·0	3,538	385,159	69,046	457,714	4,205	2,938	24,092	31,240
5	Muddebihal ..	124	490	30	139	154	569	89,487	157	1,78,644	154	364,394	100·0	773	301,917	37,127	339,817	2,267	27	22,283	24,577
6	Bagalkot ..	140	591	34	133	174	664	127,434	186	2,02,877	173	496,572	99·8	698	312,880	31,970	345,798	5,495	59,199	27,288	91,982
7	Badami ..	150	511	32	104	182	615	108,202	175	1,62,211	180	391,629	99·5	758	219,169	56,229	276,156	8,111	88,829	18,533	115,473
8	Hungund ..	148	451	21	70	169	521	110,581	212	1,81,525	169	333,300	100·0	307	273,384	15,607	289,298	1,269	24,297	18,496	44,062
	Total ..	1,013	5,058	161	650	1,174	5,708	862,973	151	15,82,064	1,169	3,640,921	99·5	19,935	2,641,815	559,591	3,221,341	48,831	177,227	195,522	419,580

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Bijapur ..	..	..	538	3,221	59	3,818	..	544	..	..	..	..	1,566	201	1,720	..	826	4,397	499	3,898
2	Indi ..	..	101	..	6,672	..	6,773	..	1,331	..	..	..	..	3,312	229	1,227	..	1,416	7,539	766	6,773
3	Sindgi ..	..	..	..	3,360	..	3,360	..	700	..	..	..	..	340	198	1,201	..	1,096	5,335	175	5,160
4	Basavadi ..	..	..	..	3,538	..	3,538	..	451	..	..	..	..	1,132	4,114	576	5,358				
5	Muddebihal ..	..	..	..	516	257	773	..	32	Separate figures not available.				110	49	188	..	412	791	118	673
6	Bagalkot ..	..	28	..	580	..	608	..	128					72	163	281	..	55	699	97	608
7	Badami ..	..	..	91	412	138	758	..	166					213	284	151	..	811	1,625	53	753
8	Hungund ..	..	..	..	307	..	307	..	21					31	141	113	..	307	613	..	307
	Total ..	..	129	629	18,602	454	19,935	..	3,140					6,427	1,272	6,085	..	5,195	22,119	2,184	19,935

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Others.	Total.	Pulses. Tur.	Gram.	Mung and Udid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Oil Seeds. Sugarcane.	Sesamum.	Linseed.	Castor-seed.	Ground-nut.	Safflower-seed.	Niger-seed.	Others.	Total.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder cropped.
		Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Bijapur ..	255,566	28,861	828	46,952	123	366	759	335,445	3,490	7,496	1,189	3,180	1,044	16,391	982	126	241	1,349	70	..	70	698	120	710	7,936	50	54	16,857	..	65	27,672	21,954	708	22,662	1,905	466,312	941	465,371
2	Indi ..	315,250	12,028	373	22,061	5	310	149	349,876	6,626	10,795	1,965	6,201	318	25,906	854	214	125	1,193	140	..	140	442	135	1,614	8,939	21	311	21,224	..	43	32,202	19,508	364	19,872	1,641	432,292	864	431,903
3	Sindgi ..	285,593	13,496	201	39,536	6	197	620	339,645	1,827	7,368	966	1,714	575	12,450	698	254	191	1,143	103	..	103	851	93	628	15,249	75	85	22,280	..	65	38,411	6,268	831	7,099	1	399,798	735	399,064
4	Basavadi ..	317,813	12,446	41	25,460	2	577	184	356,622	2,597	6,074	408	5,112	280	14,471	1,086	499	201	1,776	52	31	156	704	96	320	15,183	27	11	24,398	128	..	40,117	33,707	478	34,185	..	408,880	670	408,210
5	Muddebihal ..	185,761	12,094	36	30,938	..	111	376	229,316	5,229	5,210	881	3,608	337	15,265	1,567	37	52	1,656	35	..	35	194	9	454	9,799	204	..	8,973	203	..	19,723	47,806	427	48,233	335	314,916	30	314,877
6	Bagalkot ..	182,403	7,612	60	25,484	22	4,196	1,192	219,567	4,552	4,295	2,232	5,904	1,162	20,772	533	81	550	1,364	9	..	9	298	50	671	5,728	..	541	6,922	..	..	13,962	69,932	795	70,727	177	324,410	240	324,170
7	Badami ..	107,331	26,569	420	8,647	..	45	2,187	150,197	9,879	3,462	4,105	8,131	1,076	26,653	851	31	119	3,001	..	27	27	194	381	714	3,103	200	..	2,889	532	4	7,323	29,303	765	30,068	51	216,731	160	216,571
8	Hungund ..	111,132	2,771	194	21,124	1	18	5,306	140,538	4,150	7,641	1,130	5,569	583	19,073	1,626	19	39	1,684	427	10	437	226	44	454	6,401	149	..	3,885	353	5	11,247	103,834	436	104,270	51	277,570	901	276,669
	Total ..	1,690,868	135,972	2,153	276,738	137	1,839	18,777	2,095,509	33,320	51,056	11,792	33,360	6,323	136,343	8,197	1,211	1,718	16,126	908	68	976	3,557	891	5,567	72,338	866	466	108,619	1,309	700	189,865	328,104	4,849	332,953	4,189	2,781,409	4,579	2,776,830

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Maize.	Others.	Total.	Pulses. Tur.	Gram.	Mung and Udid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Oil Seeds. Sugarcane.	Sesamum.	Linseed.	Castor-seed.	Ground-nut.	Safflower-seed.	Niger-seed.	Others.	Total.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder cropped.
		Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Bijapur ..	237,606	8,718	1,190	8,227	10	712	124	257,087	937	4,703	134	790	150	6,714	1,263	251	300	1,814	66	..	66	578	198	76	1,373	..	..	87	..	11,661	13,197	..	..	..	10	311,778	369	311,409
2	Indi ..	303,644	1,351	879	5,287	4	450	143	321,758	955	5,175	282	269	77	6,486	725	227	264	1,209	124	..	124	625	229	558	1,945	..	..	92	14,176	42	129	16,842	56,104	226	56,330	4,223	405,496	966	404,530
3	Sindgi ..	262,820	5,499	653	22,679	..	278	183	292,072	765	7,081	449	2,595	92	10,982	892	198	309	1,399	211	..	211	892	198	120	9,431	216	..	81	15,262	470	..	27,630	75,211	1,802	76,213	..	404,597	707	403,890
4	Basavadi ..	184,709	12,193	268	38,787	3	749	269	236,978	2,078	4,831	699	4,548	504	13,422	2,109	501	628	3,195	92	49	141	1,101	298	542	7,285	30	..	48	10,557	1,074	..	19,228	110,395	1,048	111,443	865	389,227	603	388,624
5	Muddebihal ..	152,715	9,433	94	15,752	..	88	210	178,292	4,062	4,623	601	2,773	315	12,374	913	262	441	1,621	28	..	28	199	49	199	4,836	..	..	9	5,137	453	..	10,895	96,692	810	97,502	1	302,751	61	302,690
6	Bagalkot ..	162,755	3,945	50	18,972	4	168	3,712	189,605	4,204	4,462	916	5,045	428	15,053	1,635	36	121	1,792	23	..	23	239	72	390	5,528	..	..	1	4,042	..	740	10,701	95,257	921	96,658	431	314,575	897	313,488
7	Badami ..	103,680	6,345	727	10,858	1	6	1,431	143,078	9,318	3,547	5,089	9,231	1,052	28,236	2,573	16	236	2,818	..	..	..	324	213	631	2,277	..	..	..	2,078	601	4	5,974	38,120	674	38,794	1	305,627	314	305,313
8	Hungund ..	119,901	1,713	205	14,555	..	4	1,841	138,219	2,313	9,435	854	4,212	336	17,150	913	10	41	964	284	6	290	254	31	427	8,434	..	..	..	3,116	283	82	12,342	111,996	494	112,432	42	281,724	34	281,688
	Total ..	1,527,830	72,157	4,066	135,617	52	2,455	14,911	1,757,088	29,474	44,109	9,009	29,460	2,790	110,342	11,055	1,364	1,933	14,352	798	71	869	4,202	1,283	2,993	40,009	246	310	35,440	2,903	13,118	115,019	669,606	14,128	683,734	5,572	2,672,461	3,134	2,669,327

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Bijapur ..	21,420	422	118	59	780	179	13,588	7,022	16,230	6,380	68,255	1,551	37,537	27,408	5,849	860	151	3,514	36	8	211,237	255	101	42	634	135	9,114	5,523	10,496	3,672	51,409	1,405	33,831	14,062	2,019	693	201	3,329	17·7
2	Indi ..	21,287	573	14	219	64	1,366	5,952	8,146	5,801	63,469	1,073	23,030	31,723	2,725	1,710	52	2,598	36	3	22,598	376	183	55	697	57	11,992	5,549	16,466	4,841	61,623	1,037	20,692	16,681	2,707	1,207	38	2,262	17·8
3	Sindgi ..	24,945	404	24	36	320	186	8,978	6,381	13,965	7,081	61,722	1,295	17,095	31,775	1,531	537	5	1,846	36	2	23,832	393	87	67	298	135	9,688	7,170	14,981	6,614	63,220	1,539	15,249	19,661	3,830	581	7	2,092	32·4
4	Basavadi ..	24,246	240	57	55	662	289	9,799	7,668	12,995	7,293	63,218	1,150	12,598	28,360	5,983	425	23	3,286	34	9	20,948	149	409	64	735	204	7,708	7,314	8,561	5,047	51,150	1,172	10,685	13,681	732	4,560	244	2,882	49·4
5	Muddebihal ..	20,534	246	185	496	335	211	9,478	8,335	13,253	8,419	61,045	1,146	7,651	21,586	5,814	2,090	53	2,749	30	4	17,168	80	70	35	306	197	6,992	7,562	10,012	5,564	40,936	1,026	6,562	16,588	6,253	411	35	2,751	30·10
6	Bagalkot ..	24,795	50	68	66	584	132	15,093	12,662	13,785	8,217	75,384	769	11,970	18,609	9,848	126	62	4,096	26	2	24,105	46	322	114	597	315	11,436	11,279	10,535	6,705	65,436	856	15,592	17,923	9,240	1,227	158	4,560	26·8
7	Badami ..	23,930	198	235	611	266	113	8,553	10,629	10,254	6,813	66,784	961	13,695	18,467	5,514	56	59	1,875	19	7	21,111	192	539	93	213	206	12,221	10,698	8,561	5,446	59,252	1,266	19,348	16,798	8,642	274	40	3,547	19·25
8	Hungund ..	19,366	121	207	457	396	157	8,813	9,864	8,877	7,718	55,564	783	7,634	16,035	7,527	184	30	3,305	28	7	17,799	146	200	49	181	199	6,810	8,688	7,133	5,872	46,827	654	9,490	10,836	7,013	125	24	3,547	30·8
	Total ..	184,521	2,244	991	3851	3,551	1,486	91,558	67,594	105,249	57,722	515,295	8,128	131,150	201,303	52,197	5,023	495	25,453	31	1	168,803	1,628	1,931	489	3,133	1,448	75,315	63,526	86,945	43,861	447,029	8,010	131,454	124,481	45,450	8,028	755	24,995	29·5

Agricultural Stock, 1918-19.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Bijapur ..	21,420	422	118	59	780	179	13,588	7,022	16,230	6,380	68,255	1,551	37,537	27,408	5,849	860	151	3,514	36	8	211,237	255	101	42	634	135	9,114	5,523	10,496	3,672	51,409	1,405	33,831	14,062	2,019	693	201	3,329	17·7
2	Indi ..	21,287	573	14	219	64	1,366	5,952	8,146	5,801	63,469	1,073	23,030	31,723	2,725	1,710	52	2,598	36	3	22,598	376	183	55	697	57	11,992	5,549	16,466	4,841	61,623	1,037	20,692	16,681	2,707	1,207	38	2,262	17·8
3	Sindgi ..	24,945	404	24	36	320	186	8,978	6,381	13,965	7,081	61,722	1,295	17,095	31,775	1,531	537	5	1,846	36	2	23,832	393	87	67	298	135	9,688	7,170	14,981	6,614	63,220	1,539	15,249	19,661	3,830	581	7	2,092	32·4
4	Basavadi ..	24,246	240	57	55	662	289	9,799	7,668	12,995	7,293	63,218	1,150	12,598	28,360	5,983	425	23	3,286	34	9	20,948	149	409	64	735	204	7,708	7,314	8,561	5,047	51,150	1,172	10,685	13,681	732	4,560	244	2,882	49·4
5	Muddebihal ..	20,534	246	185	496	335	211	9,478	8,335	13,253	8,419	61,045	1,146	7,651	21,586	5,814	2,090	53	2,749	30	4	17,168	80	70	35	306	197	6,992	7,562	10,012	5,564	40,936	1,026	6,562	16,588	6,253	411	35	2,751	30·10
6	Bagalkot ..	24,795	50	68	66	584	132	15,093	12,662	13,785	8,217	75,384	769	11,970	18,609	9,848	126	62	4,096	26	2	24,105	46	322	114	597	315	11,436	11,279	10,535	6,705	65,436	856	15,592	17,923	9,240	1,227	158	4,560	26·8
7	Badami ..	23,930	198	235	611	266	113	8,553	10,629	10,254	6,813	66,784	961	13,695	18,467	5,514	56	59	1,875	19	7	21,111	192	539	93	213	206	12,221	10,698	8,561	5,446	59,252	1,266	19,348	16,798	8,642	274	40	3,547	19·25
8	Hungund ..	19,366	121	207	457	396	157	8,813	9,864	8,877	7,718	55,564	783	7,634	16,035	7,527	184	30	3,305	28	7	17,799	146	200	49	181	199	6,810	8,688	7,133	5,872	46,827	654	9,490	10,836	7,013	125	24	3,547	30·8
	Total ..	184,521	2,244	991	3851	3,551	1,486	91,558	67,594	105,249	57,722	515,295	8,128	131,150	201,303	52,197	5,023	495	25,453	31	1	168,803	1,628	1,931	489	3,133	1,448	75,315	63,526	86,945	43,861	447,029	8,010	131,454	124,481	45,450	8,028	755	24,995	29·5

BIJAPUR STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in Use. For Irrigation. Kachha.	Wells in Use. For Irrigation. Pakka.	Wells in Use. For Irrigation. Total.	Wells in Use. For Drinking.	Wells in Use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		Nc.	No	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Bijapur ..	1	..	..	..	..	..	1,112	517	1,629	387	368	2	12	9	..	..	3
2	Indi ..	3	..	..	..	..	..	2,009	370	2,379	498	118	..	..	5	1	..	10
3	Sindgi ..	..	..	..	..	..	..	1,239	480	1,719	461	138	3	4	6	..	..	..
4	Basavanbagewadi ..	1	..	..	1	..	..	1,206	150	1,356	238	56	..	7	29	..	3	1
5	Muddebihal ..	..	..	..	..	..	..	423	188	611	188	113	..	..	18	..	..	..
6	Bagalkot ..	..	..	..	..	..	..	113	129	242	212	38	1	24	72	..	..	..
7	Badami ..	3	..	..	..	..	..	74	152	226	230	108	7	27	91	..	..	..
8	Hungund ..	..	..	..	..	..	..	120	179	349	238	217	10	18	30	5	..	1
	Total ..	8	..	..	1	..	..	6,346	2,165	8,511	2,672	1,156	23	92	230	6	3	15

Government Protective Irrigation Works, 1922-23.

No.	Name of work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Muchkundi Tank ..	5,570	5,417	3,417	750	71	387	458
	Total ..	5,570	5,417	3,417	750	71	387	458

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Bijapur ..	1,776	8,343	5,884	477	19	15,699	484,150	30·8	12 7 0	0 6 5
2	Indi ..	1,612	8,058	5,036	426	13	15,105	427,486	29·2	13 4 0	0 7 3
3	Sindgi ..	1,573	8,707	4,834	466	18	15,598	463,844	29·7	15 2 10	0 8 2
4	Bagewadi ..	2,052	9,076	4,074	380	24	15,606	439,532	28·5	13 15 4	0 8 4
5	Muddebihal ..	2,272	6,768	2,430	175	10	11,655	269,319	23·20	13 8 0	0 9 5
6	Bagalkot ..	2,166	8,776	1,166	235	9	12,471	271,494	21·76	10 7 3	0 8 9
7	Badami ..	2,655	5,417	1,042	104	17	10,235	276,071	26·05	15 6 9	0 9 2
8	Hungund ..	5,120	8,102	2,120	135	10	15,577	247,992	16·00	12 6 10	0 12 5
	Total ..	24,345	63,307	26,776	2,398	120	116,946	2,879,888	23·75	13 5 3	0 7 0

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per head of population including alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Bijapur ..	385,434	1,89,696	0 7 0	119,120	1 9 6
2	Indi ..	390,726	1,77,659	0 7 3	80,261	2 11 10
3	Sindgi ..	386,521	1,93,603	0 8 0	87,920	2 12 0
4	Bagewadi ..	319,930	1,91,483	0 9 7	86,172	3 0 9
5	Muddebihal ..	217,152	1,28,968	0 10 10	80,254	1 12 5
6	Bagalkot ..	155,965	1,57,956	1 0 4	127,494	1 6 4
7	Badami ..	134,496	86,222	0 10 6	99,167	1 3 4
8	Hungund ..	171,536	1,47,104	0 13 9	92,478	1 15 6
	Total ..	2,161,460	12,54,351	0 9 3	775,306	2 1 1

Government Protective Irrigation Works, 1918-19.

No.	Name of work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.			
1	Muchkundi Tank ..	5,570	5,417	3,417	750	...	...	...
	Total ..	5,570	5,417	3,417	750	...	...	...

Rainfall.

No.	Station.		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Bijapur ..	Maximum 1877 ..	..	0·40	2·60	0·31	4·98	2·24	4·23	13·78	8·77	..	3·41	40·72
		Minimum 1876 ..	..	0·86	1·02	..	2·13	0·59	0·25	0·34	..	..	..	5·41
		Average ..	0·09	0·22	0·80	1·31	3·37	2·51	2·98	6·53	3·88	1·52	0·31	23·28
		Rainfall for 1922-23 ..	..	..	0·82	0·72	..	3·17	1·21	0·34	1·60	0·71	9·66	..
2	Indi ..	Maximum 1892 ..	..	..	0·13	0·42	1·11	7·41	6·40	10·76	7·95	12·66	0·81	..
		Minimum 1876 ..	..	..	..	0·16	..	1·26	0·29	1·54	0·42	0·16	..	..
		Average ..	0·08	0·10	0·21	0·63	0·92	3·75	2·98	3·98	7·04	3·61	1·27	0·38
		Rainfall for 1922-23 ..	..	0·16	2·91	0·48	0·29	0·76	2·65	0·17	1·41	1·12	5·58	..
3	Sindgi ..	Maximum 1892 ..	..	..	..	0·44	1·68	7·48	6·80	11·89	12·49	7·09	2·18	..
		Minimum 1876 ..	..	..	..	..	..	..	..	..	1·52	0·10	..	..
		Average ..	0·17	0·11	0·38	0·77	1·00	3·82	3·21	5·06	5·41	3·47	1·33	0·44
		Rainfall for 1922-23 ..	..	0·10	1·34	0·49	0·22	3·95	1·50	0·57	0·50	1·17	3·23	..
4	Bagewadi ..	Maximum 1892 ..	..	..	..	0·96	0·27	4·34	3·28	6·39	10·34	11·03	0·37	0·01
		Minimum 1876 ..	..	..	..	..	..	..	..	..	1·51	0·57	..	..
		Average ..	0·08	0·14	0·30	1·03	1·34	3·38	2·86	3·36	6·54	3·91	1·18	0·43
		Rainfall for 1922-23 ..	..	0·38	0·90	0·25	0·10	2·89	1·10	0·20	0·70	2·73	2·45	..
5	Muddebihal ..	Maximum 1892 ..	..	..	..	0·70	2·70	4·78	3·14	5·16	12·66	13·96	1·21	..
		Minimum 1876 ..	..	..	..	..	..	..	..	..	0·10	..	..	..
		Average ..	0·05	0·12	0·18	0·92	1·64	3·21	2·95	3·82	7·15	4·21	1·39	0·21
		Rainfall for 1922-23 ..	..	0·18	0·71	0·46	0·43	1·73	2·18	0·44	0·49	1·88	3·87	..
6	Bagalkot ..	Maximum 1916 ..	..	..	..	0·46	2·26	3·48	12·38	1·86	7·22	9·68	10·89	..
		Minimum 1876 ..	..	..	..	..	..	..	..	..	1·95	0·32	..	..
		Average ..	0·03	0·09	0·20	0·83	1·28	2·96	2·79	2·36	5·93	3·25	1·42	0·26
		Rainfall for 1922-23 ..	..	0·42	1·51	0·48	1·22	0·88	1·25	0·43	0·44	3·60	1·87	..
7	Bilgi P. ..	Maximum 1916 ..	..	..	..	0·35	3·29	3·10	12·59	1·74	6·21	6·98	11·80	..
		Minimum 1905 ..	..	..	..	0·25	1·17	1·10	0·10	1·94	0·28	0·82	..	..
		Average ..	0·07	0·05	0·27	0·86	1·78	3·06	2·18	3·26	6·09	3·22	1·35	0·30
		Rainfall for 1922-23 ..	..	0·26	0·72	0·89	..	2·49	1·08	1·41	0·42	4·90	2·63	..
8	Badami ..	Maximum 1916 ..	..	..	..	0·70	1·72	2·01	13·01	0·84	8·55	9·25	17·56	..
		Minimum 1876 ..	..	..	..	..	..	..	..	..	1·01	0·02	..	..
		Average ..	0·02	0·09	0·22	0·94	2·09	2·63	2·50	2·93	6·78	3·75	1·61	0·34
		Rainfall for 1922-23 ..	0·03	0·04	0·91	0·40	1·63	3·86	1·75	1·02	1·35	4·44	3·19	..
9	Hungund ..	Maximum 1878 ..	..	..	..	1·86	1·55	5·93	22·40	12·55	12·91	13·19	2·88	..
		Minimum 1876 ..	..	..	0·03	0·23	..	2·60	1·87	1·16	1·66	0·10	..	..
		Average ..	0·08	0·05	0·26	0·84	1·71	2·30	2·90	3·25	6·16	3·48	1·68	0·31
		Rainfall for 1922-23 ..	..	0·24	0·48	..	2·09	3·23	2·48	4·43	1·06	2·19	2·48	..
10	Ilal D. ..	Maximum 1916 ..	..	..	..	0·43	2·12	2·99	5·78	1·90	7·89	9·28	14·36	..
		Minimum 1896 ..	0·19	..	..	0·14	0·40	2·16	1·28	1·42	0·86	..	1·80	..
		Average ..	0·06	0·05	0·24	1·03	1·87	2·46	2·81	3·12	6·39	5·79	1·92	0·38
		Rainfall for 1922-23 ..	..	0·10	0·77	1·10	0·93	0·69	2·38	2·27	0·25	1·59	1·95	..

Temperature Details (Bijapur).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1913	Mean maximum ..	86	92	98	103	100	90	86	88	90	90	88	87
	,, minimum ..	56	67	71	75	73	71	70	69	70	69	62	62
	Absolute maximum ..	87	96	103	105	108	97	93	93	94	97	91	90
	,, minimum ..	50	62	66	69	68	67	65	65	67	61	55	56
1914	Mean maximum ..	85	93	97	99	103	93	86	84	86	89	84	84
	,, minimum ..	50	65	69	73	75	72	71	69	73	67	62	60
	Absolute maximum ..	89	97	100	105	108	103	94	90	91	91	89	87
	,, minimum ..	52	56	63	65	67	70	68	66	68	60	53	46
1915	Mean maximum ..	83	88	93	100	100	95	87	87	86	86	84	81
	,, minimum ..	61	63	69	75	73	74	71	70	68	68	66	65
	Absolute maximum ..	87	95	102	103	105	106	95	93	91	91	88	86
	,, minimum ..	54	54	61	71	66	69	68	68	67	60	56	48
1916	Mean maximum ..	84	90	97	100	100	88	86	84	85	85	80	79
	,, minimum ..	60	65	69	75	71	71	71	70	69	69	64	55
	Absolute maximum ..	88	96	100	105	104	94	91	89	91	90	82	83
	,, minimum ..	55	57	60	66	69	67	69	67	64	64	57	47
1917	Mean maximum ..	82	87	93	98	95	87	88	86	83	83	81	81
	,, minimum ..	58	62	67	71	72	71	70	70	69	67	62	59
	Absolute maximum ..	87	93	98	100	98	99	93	91	88	88	86	84
	,, minimum ..	52	51	59	65	66	69	67	68	66	65	50	49
1918	Mean maximum ..	82	89	95	100	96	90	90	90	88	88	92	88
	,, minimum ..	59	63	69	73	73	70	70	70	69	68	66	62
	Absolute maximum ..	87	95	98	104	105	96	95	93	92	94	92	88
	,, minimum ..	49	56	65	65	69	69	68	69	67	59	57	51
1919	Mean maximum ..	86	92	97	101	101	88	88	87	86	87	84	82
	,, minimum ..	64	66	70	75	74	72	71	70	69	69	67	60
	Absolute maximum ..	89	95	101	104	104	96	92	90	95	90	89	85
	,, minimum ..	58	56	62	69	69	69	68	69	66	64	60	54
1920	Mean maximum ..	84	90	98	100	100	91	86	88	87	90	88	87
	,, minimum ..	62	63	71	76	73	72	71	68	70	70	63	57
	Absolute maximum ..	87	95	101	103	105	99	94	91	92	94	90	90
	,, minimum ..	54	57	60	69	70	69	69	66	66	68	53	50
1921	Mean maximum ..	86	91	99	101	104	92	86	86	86	87	81	82
	,, minimum ..	60	61	70	75	72	71	69	68	68	68	59	56
	Absolute maximum ..	92	94	103	107	108	103	93	91	92	92	84	85
	,, minimum ..	50	51	57	68	71	69	68	67	64	59	54	49
1922	Mean maximum ..	83	89	97	100	101	90	84	86	88	88	82	81
	,, minimum ..	62	64	70	75	75	71	70	69	69	69	65	58
	Absolute maximum ..	88	94	101	102	106	96	93	91	92	89	89	83
	,, minimum ..	55	54	61	70	70	69	68	68	66	60	52	47

Prices—Pre-war Normal.

No.	Taluka.	Price in Lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur-Dal.	Jowari-Kadbi.	Dry Grass.	Wages per diem per Man. Skilled Labour.	Ordinary Labour.	Field Labour.
								Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter towns.									
1	Bijapur ..	30	30	16	16	91	...	0 10 4	0 4 9	0 3 3
	Non-headquarter towns.									
2	Indi ..	32	30	15	16	64	...	0 6 11	0 3 9	0 3 3
3	Sindgi ..	34	34	15	16	80	...	0 10 0	0 5 11	0 3 3
4	Bagewadi ..	30	30	15	15	60	...	0 8 3	0 4 10	0 3 3
5	Muddebihal ..	30	31	15	15	176	...	0 12 3	0 6 4	0 3 3
6	Bagalkot ..	28	30	16	17	98	...	0 9 7	0 4 4	0 3 3
7	Bilgi P. ..	31	28	15	16	116	...	0 10 3	0 5 3	0 3 3
8	Badami ..	30	31	16	16	72	...	0 10 0	0 5 1	0 3 3
9	Hungund ..	30	28	15	15	142	...	0 8 1	0 5 10	0 3 3
	Average of the non-headquarter towns.	31	30	15	16	95	...	0 9 4	0 3 11	0 3 2

Prices, 1922-23.

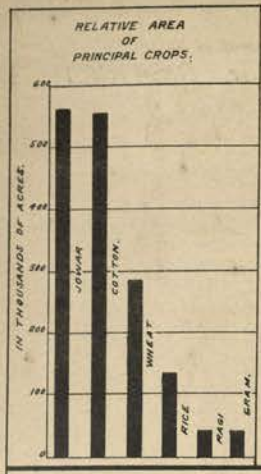
No.	Taluka.	Price in Lbs. per Rupee. Jowari.	Bajri.	Rice.	Tur-Dal.	Jowari-Kadbi.	Dry Grass.	Wages per diem per Man. Skilled Labour.	Ordinary Labour.	Field Labour.
								Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter towns.									
1	Bijapur ..	23	20	10	11	64	..	1 0 1	0 7 0	0 5 4
	Non-headquarter towns.									
2	Indi ..	23	20	10	10	77	...	0 12 0	0 8 4	0 6 4
3	Sindgi ..	23	15	10	8	57	...	0 9 7	0 4 6	0 6 2
4	Bagewadi ..	22	17	10	8	82	...	1 0 0	0 6 5	0 6 4
5	Muddebihal ..	21	20	9	10	152	...	1 0 0	0 6 6	0 6 4
6	Bagalkot ..	24	21	11	12	15	...	1 0 0	0 8 0	0 6 4
7	Bilgi P. ..	23	...	9	10	142	...	0 12 0	0 6 3	0 6 3
8	Badami ..	19	19	10	10	116	...	1 0 0	0 6 0	0 6 4
9	Hungund ..	19	15	10	9	98	...	1 0 0	0 5 7	0 6 2
	Average of the non-headquarter towns.	22	19	10	10	93	..	0 14 2	0 5 5	0 6 3

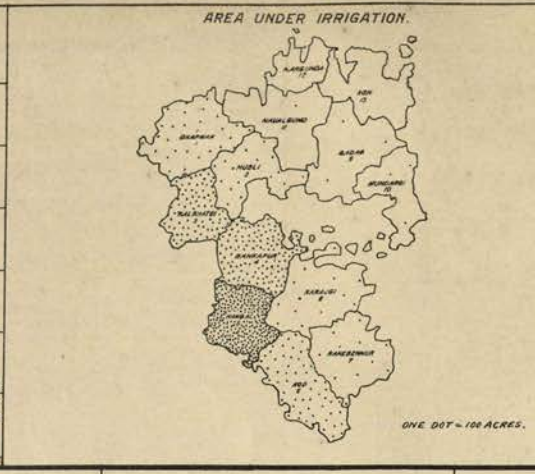
Famine Relief—Average Daily Numbers 1911-12, 1918-19 and 1920-21.

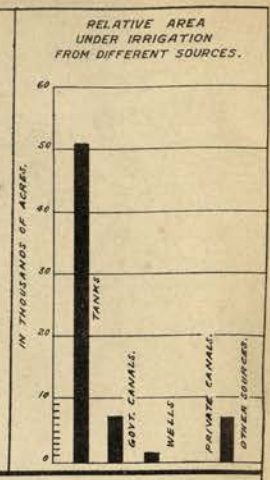
Month.	1911-12. Relief Workers.	Dependents.	Gratuitously relieved.	Total.	Price in Lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total.	Price in Lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependents.	Gratuitously relieved.	Total.	Price in Lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
January ..													..	150	150	10	10	
February ..													1,345	..	4,998	6,343	11	13
March ..													737	119	9,655	10,511	11	13
April ..							No Relief Works were opened as other measures such as suspension of revenue, grant of takavi, etc., were found to meet the situation.						2,408	350	4,134	6,922	11	13
May ..													11,803	6,457	1,161	22,421	12	12
June ..													16,015	41,639	4,159	61,809	10	10
July ..													1,752	225	3,800	5,857	10	10
August ..													..	..	3,528	3,528	11	10
September ..													52	..	1,979	2,031	10	10
October ..													..	..	2,543	2,543	10	10
Average for the period ..													3,414	4,879	3,918	12,211	10	11

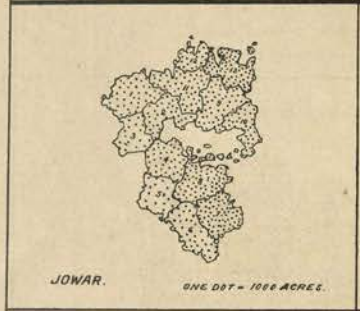
DHARWAR DISTRICT.

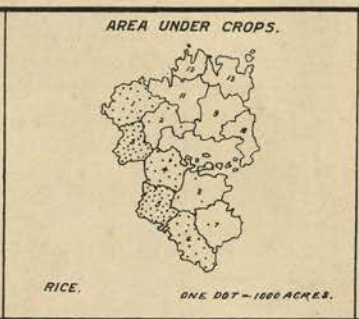
DHARWAR DISTRICT.

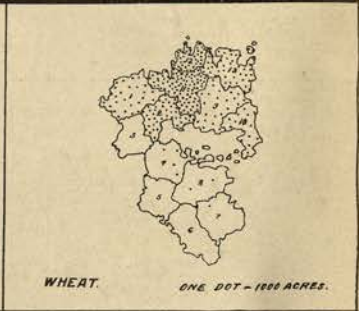


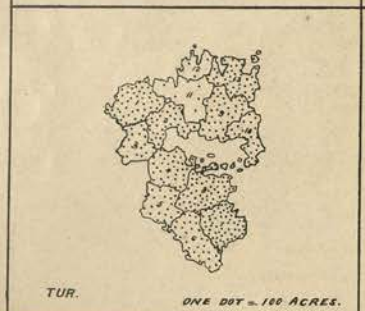


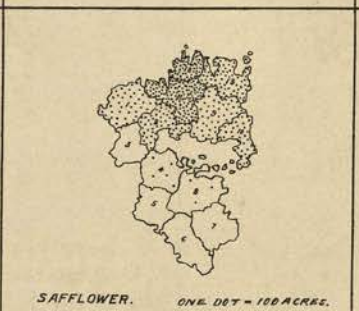


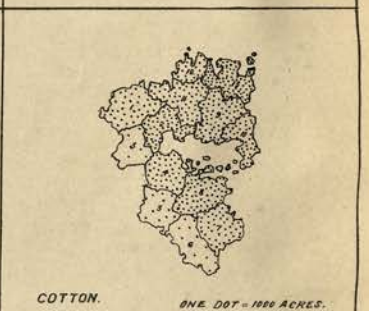


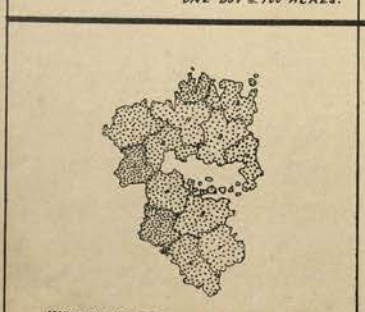


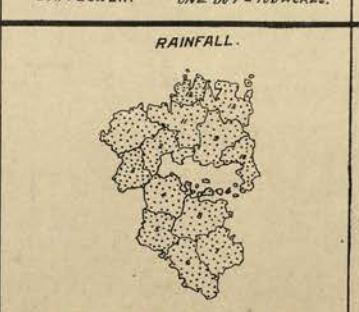












DHARWAR DISTRICT.

DISTRIBUTION OF FAMINE AREAS.

GENERAL LIABILITY TO FAMINE.

NOT LIABLE TO FAMINE.
LESS LIABLE TO FAMINE BUT WITH FREQUENT SCARCITY.
VERY LIABLE TO FAMINE.

INTENSITY OF FAMINE IN 1911-12.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1918-19.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

INTENSITY OF FAMINE IN 1920-21.

CROP OVER 60 % OF NORMAL.
CROP 33 % TO 60 % OF NORMAL.
CROP UNDER 33 % OF NORMAL.

NUMBER OF CATTLE.

1909-10

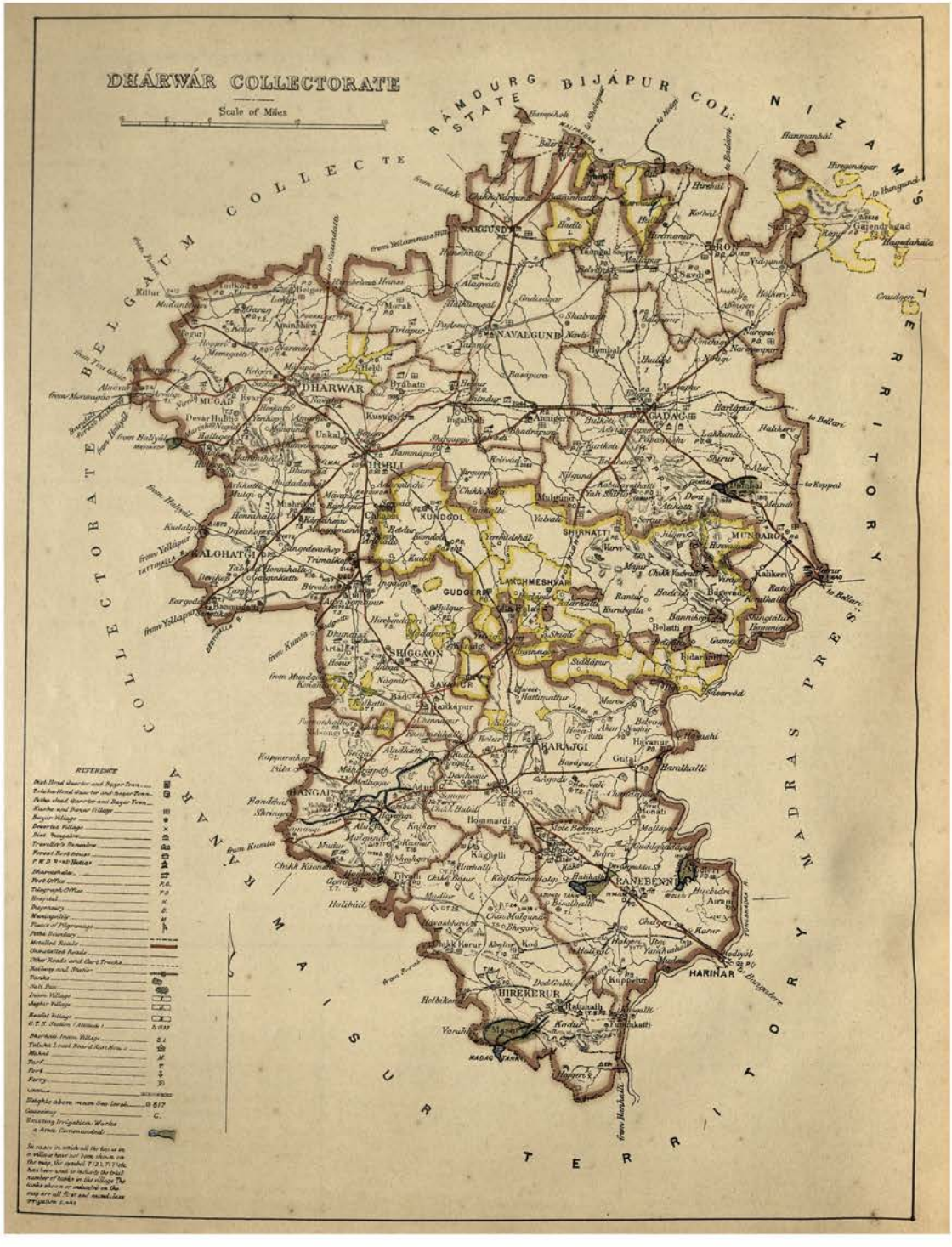
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


DHÁRWÁR COLLECTORATE
Scale of Miles
RÁNDURG
BIJÁPUR COL:
NIZAM'S TERRITORY
BELGAUM COLLECTORATE
MADRAS PRESS
MYSORE TERRITORY
NAVALGUND
DHARWAR
MUGAD
GADAG
KUNDGOL
SHURATTI
MUNDARGI
LANGHMESHVAR
GUDGIRI
SHIGGAON
SAVANUR
KARAJGI
RANEBENN
HARIHAR
HIREKERUR
KALGHATGI
HANGAL
REFERENCE

DHARWAR

POSITION AND AREA

The district of Dharwar lies between 14° 17′ and 15° 53′ north latitude and 74° 43′ and 76° 2′ east longitude and covers an area of 4,602 square miles. It is bounded on the north by the districts of Belgaum and Bijapur and the Indian State of Ramdurg; on the east by the Nizam's Dominions and the Tungbhadra river which separates Dharwar from the Bellary district of the Madras Presidency; on the south by the Mysore territory; and on the west by the district of North Kanara. Its greatest length from north to south is one hundred and sixteen miles and its greatest breadth seventy-seven miles.

PHYSICAL FEATURES

Dharwar consists of three regions—the *Desh*, the *Mallad* and the intervening Transition Tract.

Desh.—The *Desh* or *Bailsime*, open plain country, is made up of the talukas of Ron, Navalgund and Gadag and comprises about seventeen hundred square miles or a little more than one-third the area of the district. It is the area most liable to recurrence of drought. In normal years it produces rich crops of early and late *jowar*, cotton, wheat and oilseeds.

Mallad.—In this wooded hilly country of the west, failure of the rainfall is almost unknown. The staple is rice but *ragi* and an early variety of *jowar* are also important. The *Mallad* is rich in pasture land, though the cultivated fodder crops are poor and the fodder consists principally of rice-straw. There are unusual facilities for the storage of water and the *Mallad* especially in the southern parts is dotted with tanks which are of great use for the cultivation of rice. In area, the *Mallad* is about the same as the *Desh*.

Transition Tract.—Between the *Desh* and the *Mallad* and separated, from the latter, by the Poona-Harihar Road, lies a Transition Tract, about twelve hundred square miles in extent, utilising the characteristics of both the *Desh* and the *Mallad*. Its soil is a reddish alluvial clay, crossed here and there with belts of cotton soil of great richness—more friable than the black soil of the *Desh*, and more retentive of moisture than the red soil of the *Mallad*. Where the rainfall is abundant, rice is sown; where scanty, dry crops are raised.

RIVERS

From its position on the summit of the watershed of the Peninsula, Dharwar is devoid of large rivers. Of its seven principal streams, six run eastwards towards the Bay of Bengal, and one penetrates the Western Ghats to the Arabian Sea. The Malprabha, for about twenty miles, forms the northern boundary of the district, dividing it from Bijapur. The Bennihalla has its source about twenty miles south of the town of Hubli, and flowing northwards through the central plain of the district falls into the Malprabha. Its water is brackish and soon dries up. The Tungbhadra, on the south-eastern frontier, divides Dharwar from Mysore and Bellary in Madras. The Varada, a tributary of the Tungbhadra, passes from the south-west to east through two of the southern talukas. The Dharma crosses Dharwar in the south and eventually joins the Varada. The Kumudvati flows north-east through the Kod taluka falling into the Tungbhadra near Holianveri. The only stream flowing west is the Bedti Nullah or Gangvali, which passes through the Kalghatgi taluka. None of these rivers is navigable and the only one used for irrigation is the Dharma in the Hangal taluka.

CLIMATE

In the elevated tract lying between the treeless plain in the east and the rice lands which border on the western forests, the climate is both pleasant and healthy. Further west it is decidedly unhealthy in the cold weather. In the east the climate is generally dry and healthy.

RAINFALL

The monsoon is preceded in May by heavy thunder showers, which increase in violence till the rains set in. The rainy season lasts from June to December. Its long duration is due to the fact that the district has the benefit of the rain of both the south-west and the north-east monsoon winds. The former cease in October and are followed by cool north-east breezes which gradually bring rain, considerable in quantity in the east, and extending even as far west as Dharwar in occasional showers in November and December. On the whole the Dharwar district shares both monsoons in a greater degree than any other district of the Presidency.

SOILS

The soil of the district may be divided into three classes, namely, red soil, black soil and a rich brown loam. The red soil is a comparatively shallow, gravelly deposit formed by the disintegration of hills and rocks and is chiefly found in the Transition Tract; the black soil is the well-known *regar*, or cotton soil, on which the value of Dharwar as a cotton-producing area depends, and is mostly met with in the *Desh* portion. The brown loam is found chiefly in the west of the district and is of little depth. A field of black soil requires only one ploughing in the year and is seldom manured. A field of red soil, on the other hand, is ploughed three or four times and is generally manured.

CROPS

The staple food grain of the district is *jowar*, occupying normally six to seven lakhs of acres. It is the most widely grown crop everywhere except in Kalghatgi, Hangal and Kod, where rice occupies first place. Rice is the most prominent crop of the western talukas occupying about one and a quarter to one and a half lakhs of acres, nearly half of which is irrigated. Wheat is grown in the northern talukas covering roughly three and a half lakhs of acres. Of pulses, the chief kinds are *tur* and gram occupying about forty to fifty thousand acres each. *Mug* and *kulith* are also important. Cotton, indigenous and exotic, is the most important crop of the great black soil plain in the north and east and is grown to the extent of four to five lakhs of acres. Under oil-seeds linseed is by far the most important occupying over fifteen thousand acres or fifty per cent. of the total area under oil-seeds. Sesame and castor-seed with seven and five thousand acres respectively come next. Sugarcane and chillies are extensively cultivated. In the south-west are rich gardens of areca-nut and cocoanut-palms.

Rice in Dharwar is a semi-aquatic plant sown by the drill on terraces which stretch from the bottom lands high up the hill slopes. Sugarcane generally under tanks but occasionally unwatered, is grown in rice lands. In low rice lands a second crop of pulses is usually raised.

CATTLE

In the district there are some remarkably fertile tracts of black soil just to the east of the *Mallad* region, which get the advantage of both monsoons and which usually have an abundance of *kadbi* and pulse fodders and some fair grazing on the uplands, notably in the Dharwar, Haveri and Ranebennur talukas. Such tracts are undoubtedly suitable for cattle-breeding but they also produce excellent crops; and since calves of good breed can be purchased without difficulty from the breeding tracts, most well-to-do cultivators practise rearing rather than breeding. The common village cattle show the benefit of the superior fodder supply by their size and better condition but their breeding is left to chance and they are susceptible of much improvement. There are also red soil areas in the Bankapur, Ranebennur and Gadag talukas which provide fair grazing grounds and a fair supply of stored fodder. Here too some useful cattle are produced and at places a Mysore bull is kept, but the methods as far from systematic. The total number of cattle in the district was over six lakhs in 1915-16 but owing to the scarcity of 1918-19, at the cattle census of 1919-20, the total came to less than five and a half lakhs. Of cattle, plough cattle, young stock and milch cattle amount to roughly one-third each. Sheep and goats which amounted to about two lakhs in 1915-16 were also reduced to one and a half lakhs in 1919-20 due to the famine of 1918-19.

FORESTS

The area in charge of the Forest Department is about 208 square miles. The tree growth in this district is generally poor except in Dharwar and Kalghatgi talukas where it is of fair quality. The forests of Dharwar, Kalghatgi and Hangal talukas give a sufficient supply of fuel for local use and for export to some extent and a moderate supply of poles for house-building purposes. The remaining area produces only fuel which is barely sufficient for local consumption. The supply of grass in the forests is sufficient for the requirements of the district even when the rainfall is short. The forests, however, are not capable of supplying grass to other districts in times of famine. Sandal wood is a common tree in this district and the future value of this tree is very great.

LIABILITY TO FAMINE

As indicated in the general famine map the *Mallad*, with an average rainfall of thirty-four inches, may be classed as practically free from danger of famine. The Transition Tract with a normal rainfall of about thirty inches is less liable, both in degree and in frequency, to severe distress than the *Desh* which is unprotected, and has only a rainfall of less than twenty-five inches. Distress may be caused either by insufficiency of the rainfall, by

its unseasonableness or by both. The distress of 1878-79 caused by an extraordinary rat plague was quite abnormal.

IRRIGATION

The only Government Protective Irrigation Works in the district are the Dharma Canal and the four tanks of Dambal, Medleri, Madag and Asundi.

Dharma Canal.—This work has no storage reservoir but the canal takes off from the Dharma river itself. The canal serves as a feeder to several second class tanks and thus has direct and indirect irrigation under it. The project for the construction of a storage reservoir on the canal is under investigation.

Dambal, Medleri, Madag and Asundi Tanks.—These are small tanks irrigating from one hundred to eight hundred acres. All of them are dependent on local rain for their supply. In the case of Madag tank, owing to Ghat and forest catchment the supply is reliable but that is not the case with the other tanks as they are situated in the Deccan catchment.

In the north and east, the tract liable to real famine and most in need of protection, there are few facilities for irrigation. Besides the works described above, there are about three thousand second class works, of which nearly two-thirds are in the Kod and Hangal talukas. Irrigation wells number over five thousand but half of them are in the two talukas just mentioned.

DRINKING WATER

Tanks are the general source of the drinking water-supply throughout the district. There are also wells in some places. During the hot season some of the tanks dry up and the people go to wells and nallas for water at a great distance, from their villages. In times of drought the question of good drinking water is one of great moment.

INDUSTRIES

The manufactures consist of cotton and silk cloth and the usual household utensils and ornaments. Common silk and cotton cloth are woven to a considerable extent in all the large towns. Fabrics of delicate texture and tasteful design are occasionally produced. Fine cotton carpets are manufactured at Navalgund, both for home consumption and for export to the neighbouring districts. In the town of Dharwar glass bangles are manufactured. Good *saris* and *cholkhans* are produced at Hubli and Gadag. The large number of hand-loom centres scattered throughout the district affords employment to a considerable section of the population—nearly six per cent. of the population coming in as textile workers. A large number of weaving and pressing factories are in operation as also two spinning and weaving mills. Hubli and Gadag are the principal trade centres and at the former there are large railway works.

TRADE

Cotton is the chief article of export, and European goods, cocoanuts, molasses and betel-nuts are imported from Kanara and Mysore. The local trade in *jowar* is also considerable.

COMMUNICATIONS

A glance at the map shows how exceedingly well the district is served by the railway, by which it is traversed from north to south and from east to west. The protection against famine prices is in this respect as complete as it can be made. In 1876-77 all imports had to come *viâ* Karwar, one hundred and fifty miles from Ron. The black soil is almost impassable for cart traffic after heavy rain, but this difficulty is now greatly diminished by an excellent system of good roads which will stand any amount of traffic. Since the advent of the railway, numerous feeder roads have been constructed and extended from time to time and these will considerably add to the facilities for throwing in supplies of food grains and cattle fodder in times of scarcity.

RELIGION

The total population of the district, 1,036,924, is composed of 887,072 Hindus, 143,037 Musalmans, 6,544 Christians, 250 Parsis and 21 persons belonging to various other denominations.

LANGUAGES

Kanarese is the vernacular of the district and is spoken by eighty per cent. of the population. Musalmans chiefly speak Hindi (Hindustani) but not altogether, for, whereas the Musalmans number fourteen per cent. the Hindi speakers only aggregate eleven per cent. Marathi is spoken by a little over three per cent. and Gujarathi and Rajasthani (Marwadi) by about one per cent. each.

BROAD OCCUPATIONS

Broadly speaking 687,963 persons or 66·3 per cent. of the population are dependent for their livelihood on Agriculture. Industry (including mines) supports 144,078 persons or 13·9 per cent.; Trade and Transport 95,273 persons or 9·2 per cent. and Professions and the Liberal Arts 16,734 persons or 1·6 per cent. 92,876 persons or 9·0 per cent. of the population have to follow various other occupations for their maintenance.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district mainly according to occupations but in a few cases according to castes. The figures are based on the census of 1921 and represent both workers and their dependents.

Pasture and Agriculture.—Of the total population of 710,833, supported by pasture and agriculture, ordinary cultivators number 419,362; farm servants and field labourers number 223,809 while the number of persons dependent on income from rent of agricultural land is 43,887. Herdsmen, shepherds and goat-herds, 21,479, are the most numerous among the persons engaged in pasture. The economic condition of the population supported by pasture and agriculture is detailed later on under that head.

Industry.—Under this head, the Textile industry ranks first, occupying 59,768 persons. Carpenters 11,478 and basket-makers 3,703 chiefly constitute the wood industry. In the metal industry, iron-workers 5,334 and workers in brass, copper, etc., 2,315 are the chief. Potters number 4,342. In the food-industry may be mentioned the rice pounders and flour-grinders 1,961, grain-parchers 579, manufacturers of vegetable oils 392, butchers 468 and toddy-drawers 628. In the building industry the chief are brick-layers and masons 6,224, stone-cutters and dressers 3,727 and excavators, well-sinkers, etc., 3,645. Under miscellaneous industries, barbers 6,518, tailors 6,787, washermen 5,569 and shoe-makers 1,819, deserve a mention. Generally speaking all the classes noted above get nowadays enough work and fair wages and are hence mostly in a fair condition.

Trade.—The trade in food stuffs supporting 38,068 persons stands at the head. It includes grocers, and sellers of oil, salt, condiments and spices, etc., 24,389, grain and pulse dealers 6,215, sellers of milk, butter, fish, poultry, etc., 3,072 and dealers in hay, grass and fodder 695. The trade in piece-goods and textiles supports 9,563 persons. The trade in fuel such as fire-wood, cowdung cakes, etc., is also comparatively important in the district affording the means of livelihood to 3,575 persons. A considerable portion of traders are Lingayats. Traders as a class are mostly secure.

Professional Beggars.—These number 12,958. Owing to their wandering habits they are generally in a fair condition but some may need help in acute distress.

Depressed Classes.—These include the Mangs 34,380, Mahars, Holiyas and Dheds 15,619, Chambhars 4,040 and Bhangis 431. Mangs are rope-makers, Mahars sweepers and labourers, Chambhars are shoe-makers and Bhangis scavengers chiefly in Municipal towns. In a year of famine some of these classes are likely to need State help.

Brahmans (34,133).—They are priests, Government and private servants, landholders, Vakils, money-lenders and traders. They are well off.

Musalmans (143,037).—They follow a number of occupations. Some manufacture pots, others glass bangles; a few are weavers, some are fruit and vegetable sellers while some sell betel-leaf. Many are petty traders. In villages there are many of them who are cultivators, servants, etc. The Musalmans on the whole though not quite secure are not likely to require any appreciable relief in times of famine.

Christians (6,544) and *Parsis* (250) are generally well-to-do.

ECONOMIC CONDITION

The population is nearly purely agricultural, about sixty per cent. being actually tillers of the soil or field labourers. The land is held by small *rayatwari* occupants. The money-lenders are not as in the Deccan, strangers but well-to-do cultivators, *patils* and other *vatandars*. Prosperous cultivators are always enlarging their possessions by purchase of land or by mortgage with possession, the original cultivator remaining as a tenant or at times as a pure labourer.

There are two big industrial towns Hubli and Gadag in this district. The industries of these towns provide labour to a large number of people who migrate thereto from neighbouring talukas. The existence of such industrial centres tends to lessen the need for relief in times of scarcity.

The tendency of the people to migrate in search of labour in times of scarcity was most conspicuous during the scarcity of 1922-23. The people of the eastern talukas of the district temporarily migrated with their cattle to the neighbouring western talukas where crops were good and where they found sufficient labour.

The *Mallad* tract continues to deteriorate largely due to the silting of tanks and the pig pest. The latter evil is being slowly overcome by the construction of pig-proof fences and a more liberal distribution of gun licenses, and it is hoped that the newly started 'Irrigation Societies' will find ways and means to remedy the former evil.

There have been no remarkable changes in the area under cultivation. Agricultural stock, however, shows, as already noted under ' cattle ' above, some diminution owing to the widespread scarcity of 1918-19.

The average size of a holding is about fifteen acres. Holdings in the *Desh* are on an average larger than those in the *Mallad*. As might be expected the average assessment per acre of the *Desh* is considerably lower than that of the *Mallad*.

FORMER FAMINES

The severest famine for which there are details was in **1876-77.** The affected area was the *Desh* and the Transition Tract. There was a partial crop failure also in the west but the distress was not great. In this year the rainfall was deficient everywhere and hardly exceeded half the normal. In the *Desh* it varied from 2·13 inches at Mundargi to 8·10 at Nargund. With practically no rain from September onwards the *kharif* crops were ruined and *rabi* could not be sown. The distress was keenest from March to June 1877 and was protracted by the failure of the early monsoon rains of July and August. Copious rain in September and October brought relief.

In 1878 the cold weather crop of the black soil tracts was injured by rats which were also very harmful in 1879. They re-appeared in 1892-93, and again in 1911. **Locusts** appeared in 1905-06 in the Bankapur taluka; in 1917 in the Navalgund taluka but did no appreciable damage.

In **1891-92, 1896-97, 1899-1900, 1900-01** and **1901-02,** there was distress in the north-east owing to the insufficiency of the late rains and partial crop failure. The highest number on relief works in any month was, however, only 3,400.

In **1911-12,** there was famine in the eastern part of the district comprising Gadag, Navalgund and Ron talukas, and Mundargi and Nargund pethas. In the same part in **1918-19** and in **1922-23** there was scarcity owing to insufficient rain and partial failure of crops. There were scarcity conditions prevailing also in Dharwar taluka in **1904-05, 1911-12, 1918-19** and **1920-21.** In none of the years mentioned above, however, the condition was so acute as to necessitate the opening of relief works.

FORECAST OF RELIEF WORKERS

The late scarcities in the district have not given any ground for a forecast in case of serious famine, and no estimate can be given of the percentage of the population which will require relief.

DHARWAR STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Govern. No.	Govern. Area in square miles.	Alien. No.	Alien. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of column 6 to previous column.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Not available for cultivation. Forest.	Not available for cultivation. Other.	Total.	Area uncultivated. Available for cultivation.
1	Dharwar	132	348	31	82	163	430	108,305	251	3,54,068	157	256,710	92·0	2,788	194,042	28,522	225,352	105,352	17,136	35,305	18,897
2	Hubli	85	248	7	13	92	311	129,001	415	3,45,967	91	198,509	99·1	1,654	121,232	7,342	130,233	137	3,916	13,725	17,776
3	Kalghatgi	111	242	19	33	130	275	89,575	144	1,21,115	103	125,523	99·6	1,938	65,378	6,822	74,138	46,836	14,034	60,870	6,495
4	Bankapur	148	319	15	25	163	344	75,497	219	2,55,263	163	219,720	100·0	12,771	153,473	27,186	193,430	3,300	22,718	26,472	46,290
5	Hangal	142	277	17	22	159	299	62,477	209	2,04,749	170	188,129	99·6	2,318	79,638	25,775	107,731	8,759	19,654	22,535	51,148
6	Kod	179	386	101	14	189	400	83,191	206	2,21,102	187	254,887	99·5	5,598	165,068	23,363	194,029	6,294	23,699	30,875	60,858
7	Ranebennur	117	366	12	19	129	402	97,648	243	2,39,622	128	256,401	99·7	1,013	178,296	14,130	193,439	4,083	33,014	37,542	64,644
8	Karajgi	130	418	6	24	136	442	95,230	215	2,42,149	135	280,278	100·0	1,313	214,035	17,069	232,417	3,705	16,168	27,966	47,861
9	Gadag	93	646	13	13	106	659	139,344	199	3,28,312	103	442,282	98·9	511	279,327	97,045	376,883	2,634	38,188	24,577	65,399
10	Navalgund	88	543	6	22	94	565	103,610	201	4,83,648	70	354,671	100·0	70	278,296	34,111	312,577	167	1,128	19,000	51,174
11	Ron	55	360	31	72	86	432	103,046	249	2,58,561	57	237,210	84·5	99	218,385	8,641	227,125	54	1,128	8,903	10,085
	Total	1,280	4,203	184	399	1,464	4,602	1,036,924	225	30,57,760	1,416	2,874,590	97·5	65,391	19,77,374	311,540	2,354,305	52,903	242,824	224,558	520,285

Irrigation Abstract, 1922-23.

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Dharwar	..	..	2,440	135	327	2,902	2,386	..	..	..	..	..	18	144	..	..	..	2,811	23	2,788
2	Hubli	..	..	1,649	8	229	1,886	1,654	..	..	..	..	..	1	146	..	..	..	1,654	..	1,654
3	Kalghatgi	..	..	1,673	127	101	1,901	1,673	..	..	..	..	..	..	146	..	..	..	1,938	..	1,938
4	Bankapur	..	..	4,258	490	101	4,849	4,748	..	..	..	..	..	51	493	81	..	122	12,771	..	12,771
5	Hangal	..	..	1,707	703	1,302	3,712	1,609	..	..	..	..	..	11	336	1,116	..	122	32,092	..	32,092
6	Kod	..	99	20,429	2,261	119	22,483	20,355	..	..	..	..	..	1,563	645	120	..	122	5,600	..	5,600
7	Ranebennur	..	..	996	518	143	1,657	1,061	240	..	..	..	..	3	48	309	4,762	14	7,031	..	1,031
8	Karajgi	..	98	2,357	267	..	2,722	1,165	..	..	..	..	..	64	185	601	122	122	2,735	13	2,722
9	Gadag	..	654	..	..	299	1,185	58	5	..	..	..	..	16	154	674	271	122	1,183	..	1,183
10	Navalgund	..	..	107	..	24	131	..	..	..	..	..	..	..	10	100	..	..	110	..	110
11	Ron	..	..	299	24	..	323	227	..	..	..	..	..	2	23	218	..	58	328	1	327
	Total	..	851	43,469	2,247	3,597	53,799	45,487	15	..	..	..	..	139	4,694	2,733	..	1,412	53,920	121	53,799

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Govern. No.	Govern. Area in square miles.	Alien. No.	Alien. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of column 6 to previous column.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Not available for cultivation. Forest.	Not available for cultivation. Other.	Total.	Area uncultivated. Available for cultivation.
1	Dharwar	132	348	31	82	163	430	106,496	248	3,50,685	157	256,703	92·0	2,902	154,565	41,612	199,079	13,047	33,696	20,881	67,624
2	Hubli	85	248	7	13	92	311	128,295	395	3,17,004	91	198,525	99·1	1,654	120,400	7,342	129,396	495	4,171	13,340	18,006
3	Kalghatgi	111	242	19	33	130	275	89,454	369	1,22,862	129	125,523	99·6	656	70,898	55,060	126,614	4,978	48,766	15,165	68,909
4	Bankapur	148	319	15	25	163	344	72,111	224	2,58,552	163	219,715	100·0	4,748	142,100	26,631	173,479	2,234	22,268	20,434	45,236
5	Hangal	142	277	17	22	159	299	62,082	207	2,04,158	170	188,169	99·6	2,318	79,638	22,225	104,186	5,996	19,813	25,551	51,360
6	Kod	179	386	101	14	189	400	80,345	201	2,21,055	187	254,886	99·5	5,598	165,068	23,363	194,029	6,242	23,698	30,992	60,932
7	Ranebennur	117	366	12	19	129	402	96,441	238	2,39,518	128	256,399	99·7	1,061	167,378	14,130	192,953	3,856	33,255	27,539	64,644
8	Karajgi	130	418	6	24	136	442	95,898	217	2,42,147	135	280,279	100·0	2,722	205,896	25,682	232,300	3,986	16,343	28,050	47,979
9	Gadag	93	646	13	13	106	659	131,700	186	3,28,052	103	442,279	98·9	1,183	349,413	36,349	376,945	2,472	38,291	24,121	65,314
10	Navalgund	88	543	6	22	94	565	118,816	219	4,83,806	70	362,703	100·0	70	296,193	49,151	345,414	166	..	19,083	65,249
11	Ron	55	360	31	72	86	432	93,067	215	2,54,967	57	237,201	84·5	99	223,741	9,024	227,046	54	1,128	8,971	10,155
	Total	1,280	4,203	184	399	1,464	4,602	1,056,005	223	30,27,901	1,416	2,874,580	97·5	53,625	2,007,795	296,784	2,358,204	44,489	241,729	230,156	516,376

Irrigation Abstract, 1918-19.

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Dharwar	..	..	2,902	..	..	2,902	2,386	..	..	..	..	..	..	386	130	..	..	2,902	..	2,902
2	Hubli	..	..	1,654	..	..	1,654	1,597	..	..	..	..	..	3	57	..	..	..	1,657	14	657
3	Kalghatgi	..	..	656	..	..	656	506	..	..	..	..	..	..	150	..	..	..	656	..	656
4	Bankapur	..	..	4,748	..	..	4,748	4,748	..	..	..	..	..	51	493	81	309	4,762	14	4,748	
5	Hangal	..	..	1,707	..	..	1,707	1,609	..	..	..	..	..	11	336	1,116	511	122	32,094	2	32,092
6	Kod	..	..	20,429	2,261	119	22,483	20,355	..	..	..	..	..	1,563	645	120	122	122	22,483	..	22,483
7	Ranebennur	..	..	996	518	143	1,657	1,061	240	..	..	..	..	3	48	309	521	122	1,237	60	1,061
8	Karajgi	..	98	2,357	267	..	2,722	1,165	..	..	..	..	..	64	185	601	122	122	2,735	13	2,722
9	Gadag	..	654	..	..	299	1,185	58	5	..	..	..	..	16	154	674	271	122	1,183	..	1,183
10	Navalgund	..	..	107	..	24	131	..	..	..	..	..	..	..	10	100	..	..	110	..	110
11	Ron	..	..	299	24	..	323	227	..	..	..	..	..	2	23	218	..	58	328	1	327
	Total	..	851	43,469	2,247	3,597	53,799	45,487	15	..	..	..	..	139	4,694	2,733	..	1,412	53,920	121	53,799

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Barley.	Ragi.	Maize.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Hulag.	Math Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetables and Fruits.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesamu.	Linseed.	Castor-seed.	Ground-nut.	Safflower-seed.	Niger-seed.	Others.	Total.	Dyes.	Fibres. Cotton.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Dharwar	42,955	218	19,892	28,214	..	2,195	3	7,456	98,933	4,532	3,294	5,539	5,338	457	19,740	2,862	..	852	3,714	288	..	..	1,108	144	65	246	196	93	3,784	194	..	4,481	..	55,051	669	55,720	12,961	4,142	126,634
2	Hubli	36,818	..	3,259	42,327	..	852	..	6,110	89,366	1,510	1,509	3,738	3,738	1,509	11,991	1,547	..	110	1,547	288	..	..	386	..	68	1,534	329	..	4,390	..	..	6,617	..	60,570	110	60,989	2,910	..	122,870
3	Kalghatgi	16,227	..	31,718	..	..	2,818	5	4,871	55,699	1,506	494	1,009	1,229	63	4,241	1,230	..	103	1,333	..	..	..	538	243	37	998	15	..	8	1,299	..	446	..	5,295	424	5,719	7,387	25,600	13,631
4	Bankapur	45,902	134	14,587	4,369	..	2,818	..	10,988	78,798	3,479	610	3,758	3,758	99	11,704	1,773	..	138	2,111	44	322	371	646	169	221	464	160	1	1,661	3	2,964	..	43,392	590	43,982	6,978	2,586	116,394
5	Hangal	14,992	222	38,521	53	..	2,798	..	7,338	68,626	1,973	722	2,231	6,164	62	11,202	879	..	239	1,114	1	425	426	9,369	338	198	375	271	40	33	844	160	1,931	..	10,604	598	11,195	18,765	116,000	2,931	113,075
6	Kod	36,859	23	17,995	60	..	16,897	..	19,221	91,508	1,705	1,706	2,950	10,629	24	17,013	882	..	139	1,021	211	244	37,674	387	417	28	844	12	..	363	2821	1,951	..	11,662	456	12,118	10,681	179,614	5,938	173,676
7	Ranebennur	68,835	1699	1,015	639	..	1,294	6	19,112	91,508	1,705	522	1,839	13,885	191	22,143	3,095	..	83	3,178	274	230	504	12,819	991	1,360	111	851	481	31	319	91	3,164	..	45,919	376	46,295	2,814	182,524	1,974	180,550
8	Karajgi	29,448	1,885	2,844	2,496	..	1,607	..	19,813	100,486	6,099	829	5,271	14,849	352	27,368	3,549	..	207	3,926	282	164	653	6,591	1458	1,488	1,421	2,928	1,631	..	..	..	4,021	631	..	68,743	552	69,390	4,012	219,592	2,911	216,682
9	Gadag	81,166	3,212	247	25,404	41	10,865	1	6,891	127,827	5,995	1,178	2,950	6,629	5	16,757	8,813	..	1,226	19,796	33	126	159	670	205	1,421	2,928	1,631	..	..	..	4,059	..	..	14,725	108	14,833	..	146,619	..	146,619
10	Navalgund	68,732	42	..	125,804	..	117	..	..	194,695	786	5,725	616	2,413	..	9,610	477	..	52	529	..	..	46	..	8	..	92	396	5,095	..	18,828	28	19	22,320	..	77,060	141	77,201	..	302,409	3	302,406
11	Ron	76,825	2,865	..	355	41,714	..	83	5	124,278	3,909	8,737	3,150	3,601	657	20,048	85,854	348	1,235	..	7	38	45	192	92	396	5,095	..	..	..	..	6,588	449	..	12,528	..	89,201	111	89,312	162	247,912	196	247,716
	Total	562,724	7,029	130,487	279,509	41	41,988	70	103,098	1,124,946	40,584	51,235	37,038	74,823	2,308	185,988	20,731	59	2,858	23,648	570	1,639	2,209	63,509	1,866	9,298	16,464	3,360	5,718	43,788	4,380	1330	82,338	..	556,491	4,636	561,127	61,362	2,106,895	20,547	2,086,348

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Barley.	Ragi.	Maize.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Hulag.	Math Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetables and Fruits.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesamu.	Linseed.	Castor-seed.	Ground-nut.	Safflower-seed.	Niger-seed.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Dharwar	56,861	127	21,186	28,590	..	2,226	3	6,724	95,787	4,139	4,576	2,832	5,906	339	17,793	2,715	..	339	3,054	133	..	133	..	..	1,100	386	46	225	145	47	4,097	90	..	4,651	..	56,543	551	57,094	19,254	3,900	173,230
2	Hubli	32,248	573	2,351	37,216	..	695	..	5,191	78,074	2,374	3,382	2,171	5,393	71	12,091	1,115	..	71	1,186	..	..	..	..	..	681	37	551	964	383	..	4,949	..	6	6,853	..	57,551	532	58,083	16,260	762	140,110
3	Kalghatgi	16,328	62	31,495	41	..	3,902	4	5,501	55,278	1,506	1,138	699	1,215	28	4,586	508	..	28	536	..	..	..	..	..	496	106	41	1,011	..	..	..	..	1,158	..	11,006	581	11,587	1,183	1,970	71,724
4	Bankapur	39,135	118	14,848	7,743	..	4,282	..	11,989	78,593	3,209	1,022	2,913	5,970	83	13,197	1,841	..	83	1,924	15	269	284	..	..	617	486	621	573	..	..	..	..	941	..	5,220	451	46,021	4,105	147,777	921	146,856
5	Hangal	14,919	..	41,672	246	..	6,363	..	5,949	71,153	1,739	704	1,647	5,124	115	9,329	884	..	115	999	1	443	444	2,018	1,096	214	407	269	5	1,138	..	12	1,359	35	1,473	522	1,995	10,854	113,100	2,945	116,592
6	Kod	30,716	6	22,630	227	..	10,748	..	28,344	92,670	3,337	1,082	1,682	10,351	38	16,410	1,073	..	38	1,111	1,563	329	1,892	2,541	254	65	..	..	..	..	..	..	..	917	..	20,483	435	20,918	11,319	167,743	3,922	163,821
7	Ranebennur	60,529	92	240	1,456	..	429	..	22,681	85,427	4,071	962	578	11,926	133	17,670	1,628	..	133	1,761	80	263	343	5,098	40	183	38	509	15	..	38	..	..	877	..	56,069	210	56,279	2,313	169,641	491	169,154
8	Karajgi	55,955	1913	..	2,867	..	5,969	..	27,167	92,246	5,449	1,104	3,481	14,017	312	22,901	2,679	..	312	2,991	80	307	387	5,485	910	1,165	165	..	28	..	283	..	..	476	..	76,647	2,594	79,241	1,249	209,727	1,249	208,465
9	Gadag	86,281	3,382	147	53,551	15	878	..	11,221	155,480	6,115	10,401	6,764	9,168	427	32,875	3,648	..	88	107	195	..	195	2,252	1,223	3,974	..	..	800	9,588	..	2,107	16,591	..	142,327	348	142,675	655	308,006	487	307,519
10	Navalgund	69,356	60	..	77,914	..	..	..	193	188,523	5,224	4,068	..	..	58	9,350	218	..	58	276	..	..	..	..	..	58	..	..	..	..	..	..	..	58	..	11,141	90	11,231	1,499	125,427	1,499	298,309
11	Ron	77,122	2,273	..	267	57,642	..	80	15	137,599	4,290	9,033	3,730	2,535	743	20,331	1,656	..	222	1,878	2,051	..	2,051	37	126	126	101	549	5,458	..	4	5,122	..	466	11,629	..	99,140	1011	99,241	336	253,049	118	252,931
	Total	510,470	6,697	139,043	250,595	15	30,778	22	125,398	1,063,018	35,283	46,985	26,967	71,811	2,308	183,354	19,024	..	222	1,829	2,051	37	126	4,683	5,492	17,051	1,517	905	36,369	811	5,549	67,694	..	683,047	4,465	687,512	64,179	2,128,641	12,850	2,115,791

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Bullocks.	Young Stock. Buffalo-calves.	Ploughs. Cropped land per pair of plough cattle.	Carts. Small.	Carts. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.
		Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Acs.	Nos.	Nos.	Nos.	Nos.
1	Dharwar	19,505	2,594	196	151	203	122	10,273	9,529	9,774	6,771	59,098	406	5,600	5,207	2,692
2	Hubli	13,366	423	98	42	434	46	6,345	6,548	4,514	5,215	28,781	30	22	5,992	4,531
3	Kalghatgi	12,676	2,449	120	28	239	29	9,092	4,512	11,954	3,230	44,826	208	168	2,111	6,260
4	Bankapur	16,779	1,192	30	24	273	18	8,338	7,134	10,722	5,643	50,183	367	5,283	4,816	6,299
5	Hangal	19,049	1,941	73	40	119	14	11,608	5,670	12,789	4,446	55,624	335	2,833	4,968	7,891
6	Kod	24,856	1,055	271	118	426	84	15,286	11,526	12,343	6,674	70,703	331	2,844	8,545	9,277
7	Ranebennur	18,541	39	139	98	574	54	8,267	11,644	7,102	6,266	52,613	304	15,835	5,743	7,025
8	Karajgi	20,357	323	256	41	510	23	9,652	10,528	8,286	6,458	57,157	328	12,220	7,256	8,178
9	Gadag	29,287	2,066	189	74	544	112	10,422	8,611	16,638	5,402	78,452	283	20,494	9,577	9,266
10	Navalgund	14,992	114	54	281	5	..	3,517	4,022	5,882	2,823	29,982	170	4,145	2,108	3,068
11	Ron	10,975	55	89	71	225	50	4,436	4,261	4,899	3,203	28,206	262	5,406	6,549	3,789
	Total	195,182	10,303	1,663	712	3,795	540	93,357	83,924	96,891	55,939	542,386	3,387	83,473	65,753	72,465

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Bullocks.	Young Stock. Buffalo-calves.	Ploughs. Cropped land per pair of plough cattle.	Carts. Small.	Carts. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.
		Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Acs.	Nos.	Nos.	Nos.	Nos.
1	Dharwar	17,892	2,651	98	46	575	91	10,161	9,557	11,765	7,782	60,698	414	4,225	6,542	8,350
2	Hubli	12,760	564	41	19	145	5	5,090	7,049	5,842	5,662	39,351	233	4,154	8,263	4,091
3	Kalghatgi	11,844	3,201	23	16	168	10	10,144	4,285	10,121	2,568	45,916	277	275	2,981	2,594
4	Bankapur	16,575	1,772	30	19	284	4	12,624	6,777	15,177	5,226	62,746	348	3,671	6,252	8,580
5	Hangal	16,592	2,642	193	45	894	40	12,624	6,627	15,177	5,226	62,746	296	2,850	13,392	12,101
6	Kod	24,856	1,055	271	118	426	84	15,286	11,526	12,343	6,674	70,703	331	2,844	8,545	9,277
7	Ranebennur	18,541	39	139	98	574	54	8,267	11,644	7,102	6,266	52,613	304	15,835	5,743	7,025
8	Karajgi	20,357	323	256	41	510	23	9,652	10,528	8,286	6,458	57,157	328	12,220	7,256	8,178
9	Gadag	29,287	2,066	189	74	544	112	10,422	8,611	16,638	5,402	78,452	283	20,494	9,577	9,266
10	Navalgund	14,992	114	54	281	5	..	3,517	4,022	5,882	2,823	29,982	170	4,145	2,108	3,068
11	Ron	10,975	55	89	71	225	50	4,436	4,261	4,899	3,203	28,206	262	5,406	6,549	3,789
	Total	195,182	10,303	1,663	712	3,795	540	93,357	83,924	96,891	55,939	542,386	3,387	83,473	65,753	72,465

DHARWAR STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
1	Dharwar ..	No. 2	No. 1	No.	No 10	No.	No.	Nr. 128	No. 53	No. 181	No. 563	No. 241	No. 245	No. 98	No. 173	No. 12	No. 8	No. 41
2	Hubli ..	..	..	..	..	..	..	74	33	107	318	412	100	122	196	36	..	.. 14
3	Kalghatgi ..	..	..	..	..	..	..	46	10	56	661	544	590	79	79	9	1	14
4	Shiggaon ..	..	..	..	395	107	502	505	284	417	93	173	1	14	34	..	*190	*190
5	Hangal ..	3	..	..	887	85	972	464	225	1,068	92	132	18	13	17	..	..	402
6	Kod ..	15	..	2	37	..	6	1,171	284	1,455	344	386	1,039	122	168	92	20	24
7	Ranebennur ..	..	..	..	..	..	..	336	274	610	544	141	11	59	81	31	1	5
8	Karajgi ..	11	2	..	18	..	..	171	535	706	420	138	137	106	37	43	27	21
9	Gadag ..	2	..	..	21	..	..	224	388	612	853	334	16	195	108	69	3	5
10	Navalgund ..	..	..	..	..	..	..	4	38	42	113	53	.. 29	323	95	..	..	.. 10
11	Ron ..	..	..	..	42	..	106	148	193	341	204	58	..	..	..	..	2	.. 10
	Total ..	33	1	5	86	6	3	3,478	1,911	5,389	5,049	2,998	4,052	1,545	1,300	311	89	171

Government Protective Irrigation Works, 1922-23.

No.	Name of work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Dambal Tank ..	3,000	2,500	2,500	1,000	{ *110	24	{ *134
2	Medleri Tank ..	1,916	830	1,052	600	88	12	*144 100
3	Madag Tank ..	2,851	1,345	2,186	1,345	510	197	707
4	Asandi Tank ..	1,800	1,011	1,011	1,011	77	{ 30 *190	107 *190
5	Dharwa Canal ..	13,562	12,870	12,870	12,870	{ 482 *5,126	..	482 *5,126
			*Area under consolidated assessment.					
	Total ..	23,129	18,556	19,619	16,826	{ 1,267 *5,270	263 *190	1,530 *5,460

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Dharwar ..	5,466	6,541	1,013	79	14	13,063	155,191	11 8	23 15 9	2 0 4
2	Hubli ..	3,840	3,796	1,362	207	3	11,213	160,255	14 3	28 4 4	1 15 7
3	Kalghatgi ..	3,244	3,857	652	32	2	7,787	86,158	11 0	15 9 10	1 6 7
4	Shiggaon ..	4,922	6,928	1,100	95	1	12,136	158,513	13 0	19 6 1	1 8 3
5	Hangal ..	4,671	4,963	599	113	..	10,346	178,665	17 1	19 12 4	1 12 2
6	Kod ..	8,724	4,552	1,313	83	..	14,672	184,373	12 5	15 3 5	1 3 4
7	Ranebennur ..	6,558	7,797	1,077	12	..	15,479	171,860	11 1	13 6 3	1 3 4
8	Karajgi ..	5,784	9,077	1,792	289	1	16,943	209,405	12 3	14 5 10	1 2 6
9	Gadag ..	4,250	10,442	1,772	305	10	17,389	335,289	19 3	19 5 4	1 0 11
10	Navalgund ..	4,149	9,536	2,540	216	3	16,444	251,293	15 2	29 3 8	1 14 7
11	Ron ..	5,153	7,288	271	186	8	12,886	210,098	16 2	18 3 9	1 1 10
	Total ..	56,761	75,852	14,106	1,577	42	148,338	2,044,510	13 5	19 10 4	1 8 9

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area including Alienated Land in Government Villages. Popula-tion.	Incidence per head of population including alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Dharwar ..	115,198	2,32,268	2 0 3	99,861	3 3 3
2	Hubli ..	122,655	2,48,549	1 15 8	127,090	3 2 11
3	Kalghatgi ..	69,464	91,055	1 5 0	35,898	5 2 1
4	Shiggaon ..	97,849	1,57,398	1 9 10	52,372	3 4 0
5	Hangal ..	85,773	1,86,226	1 11 3	52,258	3 11 3
6	Kod ..	141,586	1,77,621	1 4 2	80,939	2 12 1
7	Ranebennur ..	141,779	1,69,721	1 3 5	91,087	2 3 4
8	Karajgi ..	148,822	1,80,337	1 3 5	89,634	2 1 5
9	Gadag ..	286,124	2,78,257	1 0 3	112,394	2 7 4
10	Navalgund ..	241,409	4,01,738	1 10 8	98,641	4 1 6
11	Ron ..	164,147	1,96,924	1 3 2	83,628	2 13 0
	Total ..	1,595,766	22,80,864	1 0	959,804	2 3 9

Government Protective Irrigation Works, 1918-19.

No.	Name of work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Dambal Tank ..	3,000	2,500	2,500	1,000	{ 177 *144	53	{ 230 *144
2	Medleri Tank ..	1,916	830	1,052	600	45	10	55
3	Madag Tank ..	2,851	1,345	2,186	1,345	685	211	*896
4	Asandi Tank ..	1,800	1,011	1,011	1,011	117	{ 22 *190	139 *190
5	Dharwa Canal ..	13,562	12,870	12,870	12,870	{ 16 *2,504	.. *357	16 *2,861
			*Area under consolidated assessment.					
	Total ..	23,129	18,556	19,619	16,826	{ 1,040 *7,048	296 *547	1,336 *8,199

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Dharwar	Maximum 1882 ..	0·91	..	..	0·47	4·77	8·69	10·77	4·28	6·83	2·39	1·96	..	49·07
		Minimum 1876 ..	..	..	..	..	..	0·92	1·48	1·84	1·62	0·29	..	..	16·21
		Average ..	0·07	0·03	0·29	1·74	3·09	4·56	6·52	2·91	3·71	0·65	0·48	..	32·08
		Rainfall for 1922-23 ..	..	..	2·48	1·76	6·39	2·56	8·49	3·09	1·06	4·96	3·29	..	34·07
2	Hubli	Maximum 1896 ..	..	..	0·42	4·19	4·89	4·12	5·50	0·88	12·78	6·26	1·86	0·14	41·04
		Minimum 1876 ..	..	..	..	..	1·98	2·98	7·00	0·81	0·53	0·40	..	..	14·62
		Average ..	0·09	0·02	0·25	1·68	2·76	3·84	4·32	3·31	3·94	4·97	1·55	0·33	27·06
		Rainfall for 1922-23 ..	..	0·04	4·47	0·98	1·31	4·93	5·36	1·80	1·54	3·35	4·19	..	27·97
3	Kalghatgi	Maximum 1898 ..	..	0·07	0·64	4·12	6·67	8·67	5·91	8·17	6·64	3·31	0·10	48·66	
		Minimum 1916 ..	0·03	..	..	1·72	3·00	3·29	1·15	4·76	3·07	0·20	0·22	20·34	
		Average ..	0·09	0·02	0·23	1·77	2·71	5·74	3·01	5·48	3·75	4·99	1·59	0·26	34·64
		Rainfall for 1922-23 ..	..	..	2·40	0·59	1·98	12·71	3·29	3·69	2·84	4·27	..	..	36·25
4	Shiggaon (Bankapur)	Maximum 1882 ..	0·15	..	..	0·40	5·65	7·40	15·48	3·12	6·56	0·61	1·84	..	41·21
		Minimum 1905 ..	0·17	0·58	..	0·83	3·61	1·51	2·57	1·64	0·61	2·25	0·60	..	14·30
		Average ..	..	0·03	0·21	1·27	2·34	2·96	5·44	3·54	3·05	4·05	1·41	0·41	25·78
		Rainfall for 1922-23 ..	..	..	1·73	..	2·93	2·50	6·81	2·16	1·10	4·37	2·99	..	23·59
5	Hangal	Maximum 1882 ..	0·40	..	..	2·67	5·81	11·94	24·90	8·27	6·12	2·82	0·71	..	63·64
		Minimum 1911 ..	..	..	..	..	0·77	5·17	5·64	2·25	0·07	2·03	0·49	0·14	17·07
		Average ..	0·08	0·05	0·16	1·27	2·67	5·18	10·13	5·56	2·88	4·52	1·85	0·34	35·63
		Rainfall for 1922-23 ..	..	..	3·64	0·63	2·98	4·72	10·23	4·53	1·84	6·62	..	..	37·47
6	Hirekerur (Kod)	Maximum 1912 ..	..	..	..	3·76	5·46	1·38	11·47	6·26	7·20	5·71	0·56	..	40·42
		Minimum 1876 ..	..	..	0·88	1·12	1·65	6·98	8·31	0·27	2·25	0·50	..	..	15·96
		Average ..	0·05	0·10	0·42	1·43	3·13	6·82	9·73	4·65	4·72	3·10	1·92	0·60	30·52
		Rainfall for 1922-23 ..	..	..	1·13	..	4·39	2·32	6·60	2·72	1·08	4·03	5·08	..	27·35
7	Ranebennur	Maximum 1890 ..	..	..	0·65	3·13	2·55	1·02	2·24	3·27	2·62	6·09	12·52	1·21	34·70
		Minimum 1876 ..	..	..	0·09	0·97	0·89	1·52	2·90	..	0·75	0·10	..	..	6·90
		Average ..	0·11	0·05	0·20	1·32	1·52	1·27	3·57	1·83	1·68	4·52	1·93	0·51	18·24
		Rainfall for 1922-23 ..	..	..	2·01	..	3·04	3·35	4·43	1·26	0·58	3·92	3·29	..	21·88
		Maximum 1912 ..	..	..	..	2·16	4·96	2·16	10·14	6·44	2·94	11·13	4·97	..	41·90
8	Haveri (Karajgi)	Minimum 1905 ..	0·14	..	..	0·13	3·31	1·64	2·33	2·88	0·54	4·50	0·21	..	15·87
		Average ..	0·16	0·04	0·14	1·63	3·87	1·27	5·96	3·82	1·60	4·76	1·60	0·53	29·37
		Rainfall for 1922-23 ..	..	..	3·39	..	3·82	3·55	7·23	1·71	1·17	4·26	4·93	..	28·05
		Maximum 1916 ..	..	..	..	0·37	3·33	3·10	5·92	6·13	3·96	5·52	11·16	..	39·62
9	Gadag	Minimum 1908 ..	..	..	..	0·50	1·59	0·81	1·59	0·64	1·68	0·27	..	0·37	10·93
		Average ..	0·07	0·05	0·25	1·46	2·57	2·65	2·76	3·39	2·65	4·27	1·51	0·41	25·14
		Rainfall for 1922-23 ..	..	0·12	0·65	2·36	1·12	..	2·04	0·38	0·79	3·75	2·73	..	14·16
		Maximum 1915 ..	1·62	..	0·81	1·94	1·71	0·83	4·59	0·19	6·47	4·32	2·86	0·37	29·31
10	Mundaragi P.	Minimum 1876 ..	..	..	0·10	0·83	0·16	0·29	0·88	0·21	0·53	0·06	..	..	3·06
		Average ..	0·16	0·04	0·12	0·77	2·43	2·30	1·87	2·12	4·17	3·09	1·72	0·25	19·84
		Rainfall for 1922-23 ..	..	..	0·17	1·69	1·70	1·15	1·12	..	0·50	1·15	2·95	..	10·39
		Maximum 1892 ..	..	..	..	0·91	2·03	4·00	1·82	14·15	6·02	1·95	0·98	..	47·97
11	Navalgund	Minimum 1876 ..	..	..	0·08	0·96	0·80	1·35	1·23	1·17	1·12	0·40	..	..	7·05
		Average ..	0·04	0·03	0·17	1·52	2·60	2·74	2·59	3·03	3·96	4·04	1·40	0·40	25·15
		Rainfall for 1922-23 ..	..	1·51	1·21	0·43	1·61	1·31	2·33	1·24	0·66	1·27	4·19	..	15·76
		Maximum 1878 ..	..	..	..	1·68	1·96	2·26	4·64	1·70	6·79	12·71	0·92	..	35·14
12	Nargund P.	Minimum 1876 ..	..	..	0·20	0·54	0·20	2·50	1·58	0·77	2·41	..	0·16	..	8·30
		Average ..	0·10	0·12	0·18	1·44	2·38	2·23	2·35	2·72	5·17	4·72	1·27	0·28	22·96
		Rainfall for 1922-23 ..	..	0·49	1·00	..	1·51	1·38	2·53	1·10	0·46	3·69	1·70	..	14·45
		Maximum 1916 ..	..	..	..	0·85	1·41	0·67	10·72	5·39	6·06	11·10	11·42	..	47·62
13	Ron	Minimum 1876 ..	..	..	..	..	..	1·95	0·98	0·89	0·98	2·83	..	..	7·63
		Average ..	0·04	0·08	0·15	0·90	2·17	3·44	3·74	2·53	4·16	4·91	1·45	0·40	25·07
		Rainfall for 1922-23 ..	..	0·42	1·20	1·10	3·23	2·95	1·59	0·73	0·73	3·23	2·59	..	17·82

Temperature Details (Dharwar).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1913	Mean maximum ..	78	85	91	94	92	80	77	77	81	80	83	82
	minimum ..	60	67	69	71	72	70	69	68	66	65	68	68
	Absolute maximum ..	82	90	96	98	98	92	84	82	86	88	84	68
	minimum ..	56	64	66	66	70	68	68	66	65	64	64	60
1914	Mean maximum ..	84	86	92	90	91	84	74	75	80	81	81	82
	minimum ..	59	73	75	74	71	71	71	70	70	71	70	67
	Absolute maximum ..	94	90	97	98	95	93	79	79	82	86	84	82
	minimum ..	58	66	69	70	75	72	71	69	70	70	68	63
1915	Mean maximum ..	79	80	88	91	88	84	77	79	80	80	79	76
	minimum ..	67	68	73	76	75	74	70	72	72	70	67	62
	Absolute maximum ..	91	86	94	94	93	84	80	82	88	86	84	80
	minimum ..	63	66	70	73	74	70	70	70	70	66	66	58
1916	Mean maximum ..	81	83	92	94	94	77	78	82	81	82	78	78
	minimum ..	64	67	72	70	72	71	70	69	70	68	68	65
	Absolute maximum ..	88	90	94	98	98	80	84	92	88	88	81	81
	minimum ..	62	64	72	70	70	70	68	68	68	70	64	62
1917	Mean maximum ..	81	83	92	91	88	77	78	78	75	79	80	73
	minimum ..	66	69	70	74	72	71	71	71	71	71	67	64
	Absolute maximum ..	82	89	93	94	93	86	82	80	79	84	84	80
	minimum ..	62	64	68	70	72	70	70	69	69	68	63	62
1918	Mean maximum ..	80	85	92	96	91	76	72	80	71	78	88	72
	minimum ..	64	70	74	75	72	72	72	72	72	72	68	64
	Absolute maximum ..	84	88	94	94	94	80	76	82	76	84	89	78
	minimum ..	60	68	70	71	71	70	70	70	70	70	65	60
1919	Mean maximum ..	77	85	90	91	95	81	79	74	81	81	86	83
	minimum ..	63	66	68	74	70	69	69	68	70	69	69	64
	Absolut maximum ..	78	88	92	98	98	88	82	80	83	89	86	86
	minimum ..	61	62	62	68	68	64	66	68	68	68	66	60
1920	Mean maximum ..	78	84	91	96	89	84	78	71	78	78	82	79
	minimum ..	62	64	66	73	73	71	72	68	71	71	68	64
	Absolute maximum ..	80	88	94	96	92	88	80	83	85	82	82	80
	minimum ..	62	62	66	68	68	68	68	68	68	68	64	66
1921	Mean maximum ..	81	84	93	94	92	85	81	80	79	82	80	79
	minimum ..	64	66	70	70	74	70	69	69	69	70	68	64
	Absolute maximum ..	85	86	95	98	98	92	82	79	80	84	80	80
	minimum ..	61	63	69	65	71	68	69	68	64	64	60	58
1922	Mean maximum ..	80	87	93	99	98	91	88	86	95	93	90	88
	minimum ..	64	67	72	74	70	69	69	72	69	70	68	64
	Absolute maximum ..	84	91	96	100	98	96	94	90	98	96	94	90
	minimum ..	60	67	65	72	72	68	68	68	69	69	68	64

Prices—Pre-war Normal.

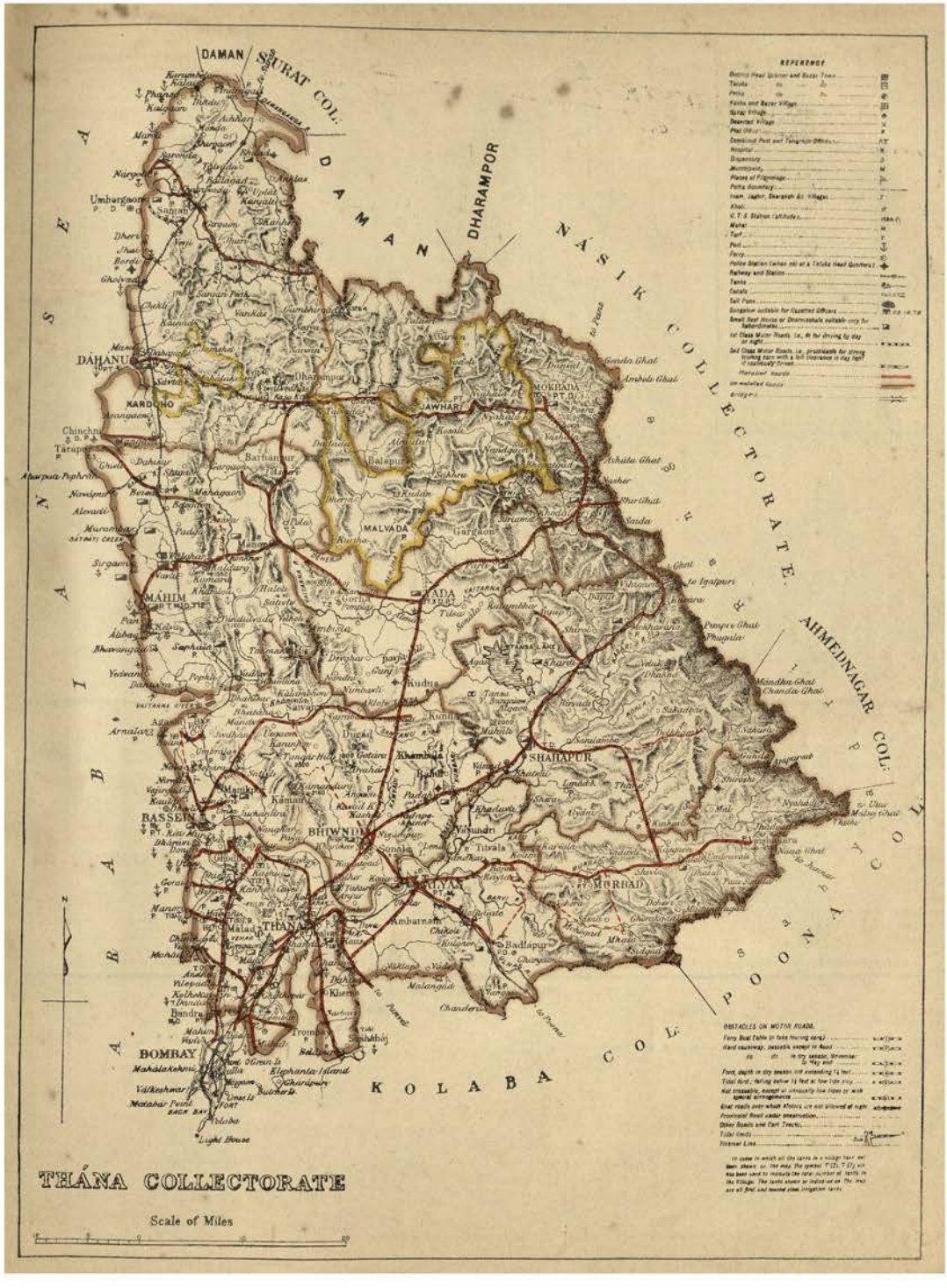
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Wheat.	Rice.	Tur-Dal.	Jowari-Kadbi.	Dry Grass.	Wages per diem per Man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Dharwar ..	27	18	17	15	128	96	0 10 2	0 5 11	0 4 9
	Non-headquarter towns.									
2	Hubli ..	27	19	16	14	152	51	0 11 1	0 5 6	0 4 6
3	Kalghatgi ..	27	..	18	14	327	183	0 8 0	0 4 4	0 3 2
4	Bankapur (Shiggaon) ..	30	17	18	15	452	..	0 9 2	0 4 4	0 3 11
5	Hangal ..	31	..	19	13	..	169	0 8 10	0 4 3	0 3 11
6	Hirekerur (Kod) ..	30	..	16	13	..	165	0 8 9	0 4 0	0 3 4
7	Ranebennur ..	30	..	18	14	165	..	0 8 6	0 4 0	0 3 1
8	Haveri (Karajgi) ..	29	..	18	14	269	..	0 9 9	0 4 3	0 3 6
9	Gadag ..	27	19	15	14	107	..	0 9 10	0 4 4	0 3 6
10	Mundaragi P. ..	31	19	17	16	128	..	0 9 6	0 5 0	0 3 11
11	Navalgund ..	28	20	15	15	107	..	0 9 6	0 5 1	0 3 10
12	Nargund P. ..	28	20	15	15	98	..	0 8 5	0 4 9	0 4 4
13	Ron ..	28	18	16	16	116	..	0 7 9	0 4 1	0 3 10
	Average of the non-headquarter towns.	29	19	16	15	192	142	0 8 11	0 4 6	0 4 8

Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Wheat.	Rice.	Tur-Dal.	Jowari-Kadbi.	Dry Grass.	Wages per diem per Man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Dharwar ..	22	13	11	9	128	98	1 0 0	0 10 0	0 10 0
	Non-headquarter towns.									
2	Hubli ..	21	12	11	9	34	198	1 0 0	0 12 0	0 8 0
3	Kalghatgi ..	20	..	11	9	198	..	0 12 0	0 8 0	0 5 6
4	Bankapur (Shiggaon) ..	22	..	10	11	..	149	1 0 0	0 8 0	0 5 6
5	Hangal ..	22	..	10	11	8	..	0 15 0	0 8 0	0 7 6
6	Hirekerur (Kod) ..	20	..	10	11	27	72	1 0 0	0 8 0	0 6 0
7	Ranebennur ..	21	..	10	11	81	..	1 0 0	0 8 0	0 6 0
8	Haveri (Karajgi) ..	23	13	11	10	116	..	1 0 0	0 8 0	0 6 0
9	Gadag ..	20	13	10	10	80	..	1 0 0	0 8 0	0 6 0
10	Mundaragi P. ..	21	13	10	11	160	..	1 0 0	0 8 0	0 6 0
11	Navalgund ..	21	15	10	11	41	..	0 10 0	0 8 0	0 5 4
12	Nargund P. ..	21	15	10	11	41	..	0 10 0	0 8 0	0 5 4
13	Ron ..	20	13	10	11	56	..	0 11 0	0 6 0	0 5 4
	Average for the period ..	20	12	10	9	77	110	0 15 8	0 7 6	0 7 1

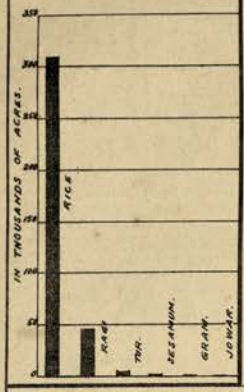
Famine Relief—Average Daily Number 1911-12, 1918-19 and 1920-21.

Month.	1911-12. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.
	No Relief Works opened.						No Famine Works were opened. Ordinary works were pushed on by Public Works Department and District Local Board to give employment to people in need of assistance.						No Relief Works opened.					


THÂNA COLLECTORATE
Scale of Miles
DAMAN
SURAT COLL.
DAMAN
DHARAMPOR
NASIK COLLECTORATE.
AHMEDNAGAR COLL.
POONA COLLECTORATE
KOLABA COLL.
ARABIAN SEA
BOMBAY
KOLABA
DAHANU
KARDONG
JAWHAR
MOKHADA
MALVADA
MÂHIM
SHAHAPUR
BASSEIN
BHIWNDI
MURBAD
THANA
KALYAN
Umbergaon
Sanjan
Tarapur
Barfoonpur
Balapur
Gargaon
Kudus
Kumbi
Khambla
Vasundri
Titwala
Ambarnath
Badlapur
Kherun
Tromboy
Sonabhâj
Elephanta Island
Kharipur
Butcher I.
Light House
Mahalakshmi
Vâlkeshwar
Malabar Point
BACK BAY
FORT
Gendia Ghat
Ambola Ghat
Achala Ghat
Shir Ghat
Sada
Vihigaon
Pimpre Ghat
Phugalai
Mandha Ghat
Chanda Ghat
Nyahadi
Nana Ghat
Chandera
Malangad
Vaitarna River
Ulhas River
Bassein Creek
Thana Creek
Panvel Creek
Mahim Creek
Dharamtar Creek
Kundalika River
Amba River
Patalganga River
REFERENCE
Railway and Station
Roads
Bridges
OBSTACLES ON MOTOR ROADS.

THANA DISTRICT.

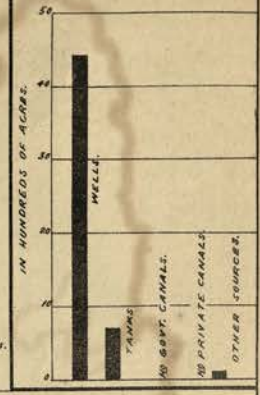
RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER CROPS.

RICE. ONE DOT = 500 ACRES.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



TUR. ONE DOT = 10 ACRES.

SESAMUN. ONE DOT = 10 ACRES.

NIGER-SEED ONE DOT = 10 ACRES.

RAINFALL.

KHARIF-SEASON ONE DOT 1 INCH

RABI-SEASON ONE DOT = 1 INCH.

HOT-WEATHER ONE DOT = 1 INCH.

NUMBER OF CATTLE.

1909-10

ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.

THANA

POSITION AND AREA

The district of Thana, including the newly formed Bombay Suburban District (noted below), lies between 18° 53′ and 20° 22′ north latitude and 72° 39′ and 73° 48′ east longitude and covers an area of 3,576 square miles. It is bounded on the north by the Portuguese Territory of Daman and by Surat district; on the east by the Western Ghats; on the south by Kolaba district and on the west by the Arabian Sea.

The Bombay Suburban District was only created in 1920 when the southern portion of the Salsette Island including Trombay was separated from the Thana district. The district consists only of two talukas. It was constituted to facilitate the development of the suburbs of the city of Bombay and is still only a temporary administrative unit. It has an area of 153 square miles and a population of 154,922.

PHYSICAL FEATURES

Thana consists of a distinct strip of lowland intersected by hilly tracts, rising to elevations varying from 100 to 2,500 feet. Towards the east and north-east the country is elevated, covered with trees and but scantily cultivated. Near the coast the land is low, and where free from inundation, fertile. North of the Vaitarna river, which traverses the central portion of the district, the shores are flat, while the hills also recede; so that a little north of the great marsh of Dahanu, the general aspect resembles Gujarat rather than the Konkan, while the language also begins to change from Marathi to Gujarati. Along the whole line of coast the soil is fertile and the villages are exceedingly populous. In the north-east the hills are covered with forest, and the valleys but partially cultivated; the villages are seldom more than scattered hamlets of huts; and the population consists mainly of uncivilised aboriginal tribes, many of whom still wander from place to place as they find land or water to suit their fancy. Inland, the district is not well-watered but is well-wooded. Except in the north-east, where much of it rises in large plateaux, the country is a series of flat, low-lying rice tracts broken by well-marked ranges of hills. Salt marshes are an important feature of this part of the district; and in them the reclamation of land for cultivation is going on steadily, though slowly.

The Vaitarna, rising in the Trimbak hills in Nasik district opposite the source of the Godavari, is the only considerable river. The river is navigable for small craft from Agashi to Manor, though deep and rapid in the rain. The Ulhas, rising in the ravines north of the Borghat, flows into the Bassein Creek, after a north-westerly course of about eighty miles. The other rivers are of little consequence—shallow during the cold season and in the hot months almost dry. Except the Bassein Creek, which separates the island of Salsette from the mainland and is navigable through its whole length, most of the inlets of the sea, though broad and deep at their mouths, become shallow-water courses within a few miles of the coast.

From the Thal *Ghat* to the extreme south, the Western Ghats form an unbroken natural boundary. Besides the main range and its western spurs, ranges of hills are found all over the district. Among the most considerable are those running through Salsette from north to south, the Daman range, in which is Tungar, and the range running from north to south between the Vaitarna and the Bassein Creek. There are also several more or less isolated hills.

CLIMATE

For fully half the year the climate is exceedingly moist and the district is generally unhealthy. There are no great variations in temperature during the different seasons of the year, the air being cooled by sea winds during the hot months and in the south-west monsoon. The mean temperature is 83° F. ranging from 58° F. in January to 103° F. in April. Except on the coast, October and November are malarious months, owing to the drying of the monsoon moisture. The cold season is short and mild.

RAINFALL

The rainfall is heavy and is entirely derived from the south-west monsoon. Along the coast from Bassein northwards it averages about sixty-six inches; elsewhere in the district the average is about a hundred inches. Frequently continuous rain causes damage to the embankments of the fields and the seed-beds of rice, washing away transplanted crops, and otherwise doing much mischief. Though so plentiful, the rainfall is confined to a short season.

SOIL

The main division of soils is into sweet and salt. Sweet land is either black or red; the black called *shet*, that is, the plain rice fields, and the red called *Mal Varkas*, that is, the flat tops and slopes of the trap hills, on which the coarse hill grains are grown. Fields are classified from their position rather than from their soil. The people have no names for different varieties of black soil, but describe a field according to its supply of water.

CROPS

Rice occupies seventy per cent. of the area under crops and the hill millets—*nagli*, *vari* and *kodra*—are the cereals. The excessive rainfall prevents the growth of the finer cereals. Niger seed, sesame and some of the pulses frequently follow rice. In the exceptional garden tracts on the coast of Mahim and Bassein talukas, where the soil is light and easily worked even after the heaviest rain, and where well irrigation is available, many varieties of garden crops are grown in regular rotation. Plantains and mangoes are the most important fruits. There is a great trade in hay with Bombay. Half of the total area of the district is not available for cultivation, the greater part being forest land.

CATTLE

Except in Mokhada, the east of Vada and Shahpur, little attention is paid to the breeding of cattle. In Mokhada care is taken in the selection of bulls, which are brought from Nasik graziers, the *Kanadas* cattle from the hills or the Nasik border being considered the best. There are no special varieties of sheep or goats. The total number of cattle in the district is about four lakhs and a half. Of these roughly two-fifths are plough cattle, one-third milch cattle and one-fourth young stock. In milch cattle, cows number nearly four times the buffaloes.

FORESTS

There are in all 1,417 square miles of forest in the district. Of this 1,036 square miles is forest proper, 379 square miles are pasture reserves or protected forest in charge of the Revenue Department and two square miles of fuel and fodder reserve. Nearly the whole area consists of good medium sized deciduous forest in which the general proportion of teak to other species is about twenty-five per cent. while *ain* (*Terminalia tomentosa*) contributes about twenty-four per cent. There are also some other good species like the *khair* (*Acacia catechu*) and Sisum (*Dalbergia latifolia*). Good bamboos are found in many places. The forests, on the whole, consist of valuable trees, and this fact combined with their accessibility to two railways and the *bunders* make them the highest revenue producing forests of the Presidency. The average area to be clear-felled annually is 6,750 acres and this is distributed into a number of *coupes* which are sold standing to contractors. Minor forest produce such as bamboos, grass (and grazing), palm leaves, gum, etc., are sold by auction and on permits. Privileges are liberal and include (1) free grazing in open forest for all agricultural cattle and for other cattle on payment of moderate fees, (2) free removal of brushwood, grass and dead leaves, (3) free removal of loppings and brushwood from fellings, (4) free removal of dead wood for sale or barter by wild tribes and (5) lopping for ash manure in certain villages. Regeneration is effected by artificial seedlings and plants and partly by the coppice of the felled stumps, which in Thana is exceedingly vigorous.

With the extension of communication facilities and revival of trade conditions the forests are sure to pay a still better return in future.

IRRIGATION

There are no Government Protective Irrigation Works in the district. The tanks for irrigation are almost all small. The number of wells used for irrigation is about five thousand. They are confined to the coast talukas and chiefly to Bassein, Mahim, Dahanu and Salsette.

DRINKING WATER

Drinking water supply is generally adequate in the district till the end of March but much scarcity is felt in the hot season in Shahpur, Murbad, Vada, Mahim and Dahanu talukas and Mokhada and Umbargaon petas even in ordinary years.

INDUSTRIES

In the district the main industry is fishing and Bombay is largely dependent on the Thana fisheries for its supply. The industry is not likely to be able to absorb any famine agriculturists from outside the district. Bhiwandi is a large hand-loom weaving centre and a certain number of factories are spreading out into the district from Bombay. Ambarnath on the G. I. P. Railway, beyond Kalyan is being developed by the Development Department as an industrial area but as yet progress is not fast. A woollen mill has been started at Thana and there is every prospect that the Thana district will become

by degrees an industrial area in its southern portion. An important minor industry is that of rice husking by small power driven machines but this again is only a seasonal industry and the labour is entirely local and unskilled.

TRADE

The chief articles of export are rice, salt, wood, lime, sand, plantains, betelnuts and dried fish. Cotton-cloth, grain, tobacco, sugar and molasses are the chief articles of import.

COMMUNICATIONS

The district is traversed in all directions by well-made roads. The break of the Agra Road has been made good by constructing a bridge over Kalyan Creek. In the hot weather the *kaccha* cart tracks cut up badly and in the rains traffic almost ceases even on the main roads. Made roads cross the Sahyadris by the Shir *Ghat* and the Thal *Ghat*, while the Nana *Ghat* is also important. The B. B. & C. I. Railway runs along the coast while the G. I. P. line divides at Kalyan into two branches, the one running to Nasik by the Thal *Ghat* and the other to Poona by the Bhor *Ghat*.

RELIGION

Of the total population of 759,916, Hindus number 697,402, Musalmans 31,904, Christians 26,863, Parsis 3,439 and Jews 308.

LANGUAGES

Marathi is the vernacular of the district and is spoken by about eighty-nine per cent. of the population, including Hindus, Native Christians and some Musalmans. Gujarati is spoken by nearly eight per cent. of the people, mostly in the Dahanu taluka. Hindi (Hindusthani) is the language of 2·5 per cent.

BROAD OCCUPATIONS

Broadly speaking, 570,210 persons or seventy-five per cent. of the population are supported by Agriculture. Industry (including mines) supports 38,621 persons or 5·1 per cent.; Trade and Transport 51,713 persons or 6·9 per cent. and Professions and Liberal Arts 5,911 persons or 0·8 per cent. while 93,461 persons or 12·3 per cent. of the population are dependent for their livelihood on various other occupations.

DETAILED OCCUPATIONS

The following detailed analysis shows the population by occupations and in a few cases by caste. It has been based on the figures of the census of 1921. The figures represent both workers and their dependents.

Pasture and Agriculture.—Of the total population of 575,245 supported by pasture and agriculture, ordinary cultivators number 403,879; farm servants and field labourers 153,202 while 13,028 persons are dependent on income from rent of agricultural land. Herdsmen, shepherds and goatherds number 583 and are a steady class. The cultivators get good return for their crops; many also find work in Bombay. As a class they are moderately well off.

Fishing is a very important industry of the district supporting 18,106 persons. As already noted, fish find a ready market in Bombay and fetch a good price. The condition of the class engaged in fishing is hence good.

Industry.—Under this head, the wood industry stands first. It includes 4,457 carpenters, joiners, etc., and 1,895 basket makers and workers in bamboos, etc. In the metal industry, workers in iron are most numerous, *viz.*, 1,960. Brass and copper workers number 327. Potters, and brick and tile makers number 2,632 and 1,777 respectively. In the food industry, manufacturers of vegetable oils 1,763, butchers 1,005 and toddy-drawers 369 deserve a mention. The building industry is chiefly composed of brick-layers and masons 1,422, stone-cutters and dressers 1,042 and excavators, earth workers and well-sinkers 474. Under 'other' industries the most noticeable are the barbers 2,431, shoemakers 2,263, tailors 1,753 and washermen 470. Most of the classes mentioned above get ample work on good remuneration round about the district in Railways, in the Development Department and in the city of Bombay and their condition is hence quite fair.

Trade.—The trade in food-stuffs (excluding hotels) supporting 18,143 persons, is the most important. It includes chiefly 10,573 grocers and sellers of oil, salt, condiments and spices, etc.; 4,568 sellers of milk, butter, fish, poultry and 1,609 grain and pulse-dealers. The trade in fuel such as firewood, cowdung cakes, etc., supports 5,726 persons. Traders as a class are secure.

Professional Beggars.—They number 2,080. Some of them are cultivators; a few deal in cattle. They are, on the whole, fairly well off.

Depressed Classes.—These include mostly the Mahars and Dheds 34,299, Chambhars 4,626, Bhangis 620 and Mangs 879. Some of the Mahars are husbandmen and others gather wood, cut grass and make brooms, etc. A considerable number find employment in Bombay as street sweepers and carriers. They are on the whole a poor class. Chambhars work in leather and some till the ground. They are fairly well off. Bhangis or scavengers are mostly found in Municipal towns. Mangs make ropes and date-leaf brooms and castrate cattle.

Brahmans (24,206).—They are mostly priests, land-holders and Government servants and a few traders. As a class Brahmans are prosperous.

Musalmans (31,904).—They follow various occupations, such as trading, cultivating, weaving, etc., etc. They are on the whole fairly off.

Christians (26,863).—Most of these are Native Christians who principally follow the callings of their former castes. A considerable number who know English are employed in Bombay chiefly as clerks. They are, on the whole, well off.

Parsis (3,439).—They are land-holders, Government servants, liquor sellers, contractors, traders, etc. Parsis as a class are well-to-do and secure.

Jews (308).—They follow various callings and are fairly off.

ECONOMIC CONDITION

The wealthiest class of the population are Gujarati and Marwadi merchants who are residing in the portion, now occupied by the Bombay Suburban district, for many years and have made this area their home.

The resident money-lenders of the district come next in point of wealth. They are mostly Chitpavan Brahmans, Marwadis and Banias with a sprinkling of Parsis in Dahanu and Umbargaon and Raos in Shahpur and Murbad. Most of these began some fifty years ago by making advances on mortgages of land. These mortgages have gradually been converted into sales and the consequent amalgamation of the numerous Rayatwari holdings in the hands of money-lenders has resulted in the practical conversion of the Rayatwari tenure into a kind of Zamandari tenure. With the exception of the Parsis these quasi-zamindars generally live far from their estates, manage them through Pardeshi or Mohamedan rent collectors and do little to improve them. During the last decade, however, the money-lending class has stopped advancing money on mortgages of land on account of the Deccan Agriculturists Relief Act. The condition of the agriculturist has improved as crops fetch a fancy price. Money is now advanced on execution of a sale deed though the transaction is really of a mortgage.

The extensive forests attract a large number of timber merchants, chiefly Mahomedans, who employ large gangs of Katkaris for felling and cutting of timber, while carts are supplied by local agriculturists and Ghatis from Mawal taluka. The supply of grass and vegetables to Bombay is in the hands of Pardeshis.

The officers of Government from Mamlatdars downwards are mostly Chitpavan Brahmans, Kayastha Prabhus and Marathas with a sprinkling of Native Christians. Many of this last class are employed on the Railways and in shops in Bombay.

The liquor trade is in the hands of Parsis with Bhandaris as their servants.

The artizans consist of a few Mahomedan weavers in Bhiwandi taluka. The state of Kolis—fishermen—on the coast is much improved on account of their thriving trade in fish.

The cultivators of the soil may be divided into (1) Marathas and high class Kunbis, (2) Agris chiefly along the Kalyan Creek and Native Christians in North Salsette and Bassein, (3) Kunbis proper, (4) Kolis, (5) Thakurs, (6) Warlis.

The condition of the first class and Native Christians of Bassein and North Salsette is good. Gardeners on the coast side are quite well off owing to high prices of garden crops. The Agris are as bad as ever. The Kunbis are not now so much in debt owing to high prices of the crops; some of them have become tenants and some have given up cultivation for domestic and other service in Bombay and other important towns. The great majority of Thakurs, Warlis and Katkaris have long since lost all the land they ever had of their own and now depend mainly on service and on the small allotment of land on wood-land tenure granted to them by Government without right of alienation. They all (specially Katkaris) get employment in timber-cutting at wood and grass depots.

The manufactures of the district are not altogether unimportant. The Wadia Woollen Mill at Thana and some brick-kilns on the Kalyan Creek are owned by Parsis in Bombay. One spinning and weaving mill near Kalyan Railway station which is still under construction is owned by a Gujarati of Bombay. Some brick-kilns on the Kalyan Creek are in the hands of local Kumbhars. Rice mills in Shahpur, Kalyan and Bhiwandi talukas are owned by Mahomedans, Banias and Brahmans residing in the district. Two bone crushing mills at Thana are owned by a Parsi and a Mahomedan of Bombay. Two saw-mills at Dahanu are owned by a Gujarati and a Mahomedan. One ice factory is opened by a Gujarati at Boisar. One dairy has been started at Palghar by Parsis of Bombay.

MIGRATION

Most of the industrial concerns noted above, however, are not likely to give any considerable relief in times of scarcity, as the labourers engaged in them are mostly of a semi-permanent nature. The only big industrial concern is the

Wadia Woollen Mill in Thana. The mill is not yet in full working strength but it is expected to employ nearly three thousand men when fully worked. The labourers for the present are in major portion imported from outside the district as skilful labour is required for the working of the mill. In the near future, however, local labourers will gain experience and there will be no need for relief in a year of scarcity round about Thana. There is no other town in this district with a big industry, but as already noted there is every prospect of Ambarnath, in the Bombay Suburban district, being a centre of big industries, and then there will be no need for relief in a year of scarcity round about the town of Kalyan. Development works and Railway works carried on in the vicinity of this district provide labour for men within a distance of five miles from the Railway Stations and these persons also will not need relief in a year of scarcity.

Years of scarcity are very rare in this district and people other than those residing in the vicinity of industrial areas referred to above, are not accustomed to leave their homes and go far in search of labour. In a year of scarcity, many prefer to live on roots and fruits in forests rather than leave their homes and migrate in search of labour.

FORECAST OF RELIEF WORKERS

After the famine of 1899-1900 in which year the rainfall was only half the normal and crop outturn hardly exceeded one-third of an average year, the only year of scarcity or famine in the district was 1918-19 and even in this year the distress was nowhere so acute as to necessitate opening of relief works.

THANA STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages: Government: No.	Government: Area in square miles.	Alienated: No.	Alienated: Area in square miles.	Total: No.	Total: Area in square miles.	Population (1921): Total.	Population (1921): Density per square mile.	Land Revenue.	Area for which agricultural statistics are available: Villages.	Area in acres.	Percentage of previous column to total area.	Area cultivated: Cropped (Net): Irrigated.	Cropped (Net): Net irrigated	Fallows.	Total.	Area uncultivated: Available for cultivation.	Not available for cultivation: Forest.	Not available for cultivation: Other.	Total.	Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		No.		No.		No.				Rs.	No.			Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	North Salsette	270	346	14	26	284	372	146,867	395	313,164	272	227,510	95·1	233	74,337	46,127	120,697	10,170	52,183	44,466	106,819	..	..	..	158	..	158	..	..	..	..	..	..	..	527	..	149	206	48	158
2	Murbad	169	345	4	6	173	351	53,175	151	133,912	170	221,239	99·3	..	62,518	43,844	106,362	446	25,894	38,577	114,877	..	..	..	50	93	143	..	..	..	..	..	..	..	143	..	..	143	..	143
3	Shahapur	195	583	8	27	203	610	78,096	128	141,027	198	378,750	96·9	..	45,061	97,282	142,343	974	194,313	40,520	235,807	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Bhiwandi	196	253	6	12	202	265	76,389	288	227,980	203	167,103	98·5	75	58,030	25,510	83,621	2,990	61,710	18,782	83,482	..	..	..	26	..	26	..	..	..	..	..	..	..	26	..	..	26	..	26
5	Basscin	84	199	5	9	89	208	82,411	396	488,441	88	132,070	99·0	13,308	37,448	12,488	53,244	4,636	49,951	24,239	78,826	..	..	729	1,786	20	2,535	..	..	..	..	..	..	120	2,381	..	807	3,308	773	2,535
6	Vada	215	521	22	46	237	567	68,961	121	91,159	228	345,771	95·0	..	54,765	94,872	149,637	609	129,751	65,598	196,158	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	Mahim	190	406	3	4	193	409	92,999	228	201,620	189	257,823	99·0	1,792	84,174	8,560	94,026	5,550	132,733	14,922	163,194	..	..	..	1,792	..	1,792	..	..	..	..	..	..	..	163	..	658	1,792	..	1,792
8	Dahanu	212	641	..	..	212	641	159,258	248	234,313	212	411,096	100·0	627	151,510	49,202	201,339	5,586	121,367	82,784	209,757	..	..	..	483	..	483	..	..	..	..	..	..	..	7	..	105	483	..	483
9	Umbergaon	Figures for Umbergaon Peta have been included in Dahanu Taluka.																				..	..	..	146	..	146	..	..	..	..	..	..	..	6	..	..	146	..	146
	Total	1,532	3,293	62	130	1,594	3,434	739,916	221	1,833,614	1,552	2,141,362	97·7	15,035	568,839	377,594	952,468	40,970	798,042	349,882	1,188,894	..	..	729	4,441	113	5,283	..	..	..	..	..	..	366	4,015	..	1,723	6,104	821	5,283
	Bombay Suburban	44	134	48	19	92	153	152,840	1,076	157,175	81	82,748	84·1	222	28,161	21,315	49,698	5,932	3,946	23,172	33,050	..	..	4	218	..	222	..	..	..	..	..	..	158	..	64	222	..	222

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages: Government: No.	Government: Area in square miles.	Alienated: No.	Alienated: Area in square miles.	Total: No.	Total: Area in square miles.	Population (1911): Total.	Population (1911): Density per square mile.	Land Revenue.	Area for which agricultural statistics are available: Villages.	Area in acres.	Percentage of previous column to total area.	Area cultivated: Cropped (Net): Irrigated.	Cropped (Net): Net irrigated	Fallows.	Total.	Area uncultivated: Available for cultivation.	Not available for cultivation: Forest.	Not available for cultivation: Other.	Total.	Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		No.		No.		No.				Rs.	No.			Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Salsette	73	93	17	52	90	145	75,025	517	111,735	76	83,710	96·4	144	29,588	7,889	37,621	9,131	14,339	22,619	46,089	..	..	..	285	..	285	..	..	..	..	..	..	..	192	..	93	285	..	285
2	Kalyan	225	256	3	5	228	261	53,543	205	198,375	225	165,205	94·8	54	50,068	45,395	95,517	1,769	33,226	34,697	69,688	..	..	..	1	18	54	..	..	..	..	..	..	..	53	..	..	54	..	54
3	Murbad	169	346	4	6	173	352	64,397	182	124,539	170	221,238	98·1	..	62,365	43,756	106,123	478	55,855	58,782	115,119	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Shahapur	195	585	8	27	203	620	86,196	141	129,100	198	378,752	96·8	..	45,815	97,361	143,176	873	194,250	40,453	235,576	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5	Bhiwandi	199	237	6	12	205	249	78,654	315	198,513	203	167,098	98·3	7	52,594	31,475	84,076	2,988	60,968	19,065	83,022	..	..	..	8	..	8	Separate figures not available.							6	..	..	8	..	8
6	Basscin	84	246	5	9	89	255	79,978	355	159,900	88	132,064	99·0	2,646	36,461	11,639	50,746	5,597	50,551	25,170	81,318	..	..	408	2,305	12	2,725							116	1,912	..	697	2,725	..	2,725
7	Vada	215	518	22	49	237	567	78,915	139	84,863	220	345,772	99·0	..	55,013	95,506	150,519	588	132,945	61,427	195,252	..	..	..	..	..	..													
8	Mahim	190	402	3	4	193	406	92,958	228	174,079	189	257,619	99·0	690	85,012	8,702	94,404	17,238	86,242	59,935	163,415	..	..	..	1,583	..	1,583							240	839	..	504	1,583	..	1,583
9	Dahanu	212	642	..	..	212	642	159,258	248	174,341	212	411,100	99·8	641	142,069	57,083	199,773	7,118	122,453	81,756	211,327	..	..	..	641	..	641							61	487	..	93	641	..	641
10	Bandra	30	65	20	40	50	105	78,828	750	79,435	43	60,562	97·5	428	14,389	18,782	33,590	4,494	267	22,211	26,972																			
	Total	1,589	3,358	97	218	1,685	3,576	882,309	247	1,433,884	1,624	2,223,320	96·8	4,602	573,373	417,570	995,545	50,566	751,094	426,115	1,227,775	..	..	409	4,857	30	5,296	..	..	..	..	..	..	417	3,489	..	1,390	5,296	..	5,296

Irrigation Abstract, 1922-23.

Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.
Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
..	..	..	158	..	158
..	..	..	50	93	143
..	..	..	..	..	..
..	..	..	26	..	26
..	..	729	1,786	20	2,535
..	..	..	..	..	..
..	..	..	1,792	..	1,792
..	..	..	483	..	483
..	..	..	146	..	146
..	..	729	4,441	113	5,283
..	..	..	218	..	222

Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
..	..	..	..	..	..	..	..	527	..	149	206	48	158
..	..	..	..	..	..	..	..	143	..	..	143	..	143
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	26	..	..	26	..	26
120	2,381	..	..	..	..	..	..	807	3,308	773	2,535		
..	..	..	..	..	..	..	..	..	..	..	..	..	..
117	963	..	..	..	..	..	..	658	1,792	..	1,792		
7	371	..	..	..	..	..	..	105	483	..	483		
65	74	..	..	..	..	..	..	6	146	..	146		
366	4,015	..	..	..	..	..	..	1,723	6,104	821	5,283		
..	158	..	..	..	..	..	..	64	222	..	222		

Irrigation Abstract, 1918-19.

Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.
Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
..	..	..	285	..	285
..	..	1	53	..	54
..	..	..	..	..	..
..	..	408	2,305	12	2,725
..	..	..	..	..	..
..	..	..	1,583	..	1,583
..	..	..	641	..	641
..	..	409	4,857	30	5,296

Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
..	..	..	..	..	..	..	..	192	..	93	285	..	285
..	..	..	..	..	..	..	..	53	..	1	54	..	54
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
Separate figures not available.								6	..	2	8	..	8
116	1,912	..	..	..	..	..	..	697	2,725	..	2,725	..	2,725
..	..	..	..	..	..	..	..	..	..	..	..	..	..
240	839	..	..	..	..	..	..	504	1,583	..	1,583	..	1,583
61	487	..	..	..	..	..	..	93	641	..	641	..	641
..	..	..	..	..	..	..	..	..	..	..	..	..	..
417	3,489	..	1,390	5,296	..	5,296							

Crops, 1922-23.

No.	Taluka.	Cereals: Jowari.	Bajri.	Rice.	Wheat.	Maize.	Coarse grains (except Nagli).	Others.	Total.	Pulses: Tur.	Gram.	Mug and Udid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce: Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics: Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds: Sesame.	Linseed.	Castor-seed.	Groundnut.	Safflower-seed.	Niger-seed.	Others.	Total.	Dyes.	Fibres: Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Kalyan	..	..	53,677	..	..	2,664	1,825	58,166	45	218	446	9	544	1,262	282	11,437	657	12,376	..	..	..	243	..	177	..	3	..	..	..	..	..	204	..	204	7,595	78,403	562	77,841
2	Murbad	..	..	37,758	..	..	1,182	..	38,940	122	1,372	76	..	1,570	3,140	475	2,070	..	2,545	..	..	..	152	..	446	..	..	..	..	..	..	..	226	..	226	20,804	62,915	793	62,518
3	Shahapur	..	..	30,697	..	..	12,675	..	43,372	119	18	2,079	128	2,344	4,688	531	1,975	..	2,506	..	..	..	22	..	55	..	..	..	..	..	..	..	136	..	136	..	47,209	2,740	44,469
4	Bhiwandi	..	..	42,380	..	..	2,245	..	44,625	90	124	414	4	174	806	251	1	..	252	..	..	..	273	..	245	..	..	..	..	..	..	..	175	..	175	12,371	59,534	783	58,751
5	Basscin	..	..	31,134	..	..	1,482	..	32,616	129	82	669	..	57	877	1,190	..	1,720	2,911	..	..	..	574	120	148	14	..	..	..	..	54	216	..	..	..	5,353	42,446	871	41,575
6	Vada	1	..	28,768	..	..	19,495	2,659	50,923	1,962	123	2,296	155	152	4,239	21	..	..	21	..	..	..	32	..	258	..	..	13	..	171	2,331	2,765	..	..	151	151	114	58,230	1,074	57,656
7	Mahim	..	..	47,952	..	..	194	1,168	49,314	1,466	602	19	725	1,746	4,558	198	..	35	233	..	..	..	620	171	40	..	..	..	..	8	13	61	..	..	13	13	35,404	88,284	928	87,356
8	Dahanu	419	6	41,599	149	3	3,977	6,955	53,105	1,923	76	1,792	..	3,417	7,168	95	112	670	877	..	..	..	220	73	11	..	208	1	..	322	208	750	..	..	184	184	83,586	145,965	3,382	142,583
	Total	420	6	305,545	149	49,895	12,603	368,618	4,557	909	9,520	783	5,876	21,245	2,201	11,585	3,813	17,599	..	..	..	1,946	366	1,366	14	213	14	..	2,803	2,622	7,032	..	..	1,167	1,167	165,190	593,165	10,416	572,747
	Bombay Suburban District.	..	..	16,018	..	58	12	16,088	..	..	..	..	..	..	2,028	..	812	2,840	..	..	..	18	..	3	..	..	..	..	..	..	15	18	..	..	18,241	37,205	274	36,931

Crops, 1918-19.

No.	Taluka.	Cereals: Jowari.	Bajri.	Rice.	Wheat.	Maize.	Coarse grains (except Nagli).	Others.	Total.	Pulses: Tur.	Gram.	Mug and Udid.	Math and Kulith.	Others.	Total.	Orchard and Garden Produce: Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics: Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds: Sesame.	Linseed.	Castor-seed.	Groundnut.	Safflower-seed.	Niger-seed.	Others.	Total.	Dyes.	Fibres: Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Salsette	..	..	14,358	..	13	61	251	14,683	..	..	65	..	4	69	7	768	..	775	..	..	..	2	..	3	..	..	..	..	..	..	3	..	..	..	..	10,831	26,363	68	26,302
2	Kalyan	..	..	39,718	..	1	1,998	1	40,718	15	159	203	12	258	647	8	12,431	..	12,439	..	..	..	35	..	88	..	..	..	..	120	11	211	..	204	..	204	54,254	136	54,118
3	Murbad	..	..	38,079	..	..	1,083	1,599	36,769	49	99	1,421	48	256	1,873	150	..	..	150	..	14	14	811	3	326	..	..	..	..	754	3	1,082	..	139	139	22,387	62,498	133	62,365
4	Shahapur	..	..	30,717	..	..	14,078	..	44,795	..	..	..	..	..	..	..	..	28	28	..	..	..	7	..	45	..	..	..	..	..	867	910	..	..	..	..	1,980	47,815	..	47,815
5	Bhiwandi	..	..	42,017	..	..	147	1,934	44,098	36	148	266	..	101	551	153	..	2	155	..	..	..	197	..	94	..	..	..	..	117	2	316	..	..	..	..	8,475	53,564	319	53,245
6	Basscin	..	..	29,831	..	..	1,179	..	31,010	76	20	418	..	20	534	767	..	1,595	2,362	509	509	1,018	116	..	50	..	..	..	..	..	29	123	..	..	..	..	4,578	39,119	594	38,525
7	Vada	3	1	25,775	..	2	20,059	2,498	48,338	2,017	718	2,270	233	135	5,371	21	..	..	21	..	..	..	114	..	305	..	..	28	..	232	2,357	2,926	..	..	93	93	1,216	58,075	463	57,612
8	Mahim	..	..	47,603	..	..	166	69,224	117,093	135	74	513	542	..	1,264	160	..	56	216	188	..	188	252	..	160	240	..	2	10	8	13	53	..	..	18	18	35,168	86,309	755	85,554
9	Dahanu	489	..	56,821	191	..	3,053	7,895	68,499	2,539	53	2,003	..	1,057	5,652	226	287	277	790	..	..	..	161	62	14	..	..	10	..	247	366	637	..	2	143	145	79,077	155,023	533	154,470
10	Bandra	..	..	11,579	..	..	..	..	11,579	..	..	..	..	..	..	..	..	..	..	..	..	..	103	..	..	..	..	..	..	..	..	..	..	..	..	..	5,334	17,016	208	16,808
	Total	432	1	325,542	191	18	47,919	15,544	389,707	4,865	1,271	7,257	625	1,831	15,859	1,306	13,542	2,080	16,938	..	523	523	937	421	1,091	4	2	40	..	1,478	3,648	6,263	..	2	810	812	168,046	600,536	3,041	597,495

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle: For Ploughs: Oxen.	For Ploughs: He-buffaloes.	For Breeding: Bulls.	For Breeding: Bull-buffaloes.	For other purposes: Oxen.	For other purposes: He-buffaloes.	Milch-Cattle: Cows.	Milch-Cattle: She-buffaloes.	Young Stock: Calves.	Young Stock: Buffalo-calves.	Young Stock: Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs: Small.	Ploughs: Large, i.e., of over 2 cattle.	Carts: For passengers and goods.	Carts: Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.	Acs.	Acs.	Acs.
1	Salsette	18,676	6,050	494	189	746	94	14,817	2,723	Figures included under Kalyan.		3,908	321	2,661	5,547	10,468	..	581	3,546	9·2
2	Kalyan	17,242	2,463	53	1	217	5	13,645	1,949	13,756	1,543	50,985	122	127	4,573	8,071	..	164	1,883	8·9
3	Murbad	14,968	2,785	25	1	65	4	16,040	2,016	17,758	1,468	55,116	112	110	1,944	7,805	..	291	2,641	9·8
4	Shahapur	12,153	5,078	250	46	215	41	9,749	4,508	5,452	3,654	41,435	249	208	3,078	7,586	..	614	2,202	13·3
5	Bhiwandi	18,898	4,519	102	28	353	86	9,694	3,396	3,864	1,237	26,366	210	1,253	945	3,341	1,442	713	2,965	14·2
6	Vada	13,159	4,006	478	69	110	9	14,952	2,855	17,004	2,851	55,522	225	5,372	454	7,733	127	14,448	1,867	17·3
7	Mahim	19,735	4,436	581	80	124	12	13,409	4,133	11,341	3,158	36,713	353	4,496	141	8,086	312	867	6,037	7·6
8	Dahanu	32,192	5,623	329	120	119	41	22,816	3,520	17,657	2,100	84,326	674	12,744	1,897	14,608	..	1,830	9,380	7·9
	Total	136,223	34,934	2,041	545	2,447	294	110,131	29,654	100,726	19,230	436,233	2,266	26,977	15,788	68,195	1,759	5,352	30,389	9·2

Agricultural Stock, 1915-16.

Cattle: For Ploughs: Oxen.	For Ploughs: He-buffaloes.	For Breeding: Bulls.	For Breeding: Bull-buffaloes.	For other purposes: Oxen.	For other purposes: Hegbuffaloes.	Milch-Cattle: Cows.	Milch-Cattle: She-buffaloes.	Young Stock: Calves.	Young Stock: Buffalo-calves.	Young Stock: Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs: Small.	Ploughs: Large, i.e., of over 2 cattle.	Carts: For passengers.	Carts: For produce and goods.	Carts: Cropped land per pair of plough cattle.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.	Acs.	Acs.	Acs.	Acs.
10,569	2,452	72	20	955	104	5,102	3,872	4,546	1,334	29,027	338	41	5,826	5,366	..	604	2,676	7·4
14,285	5,264	254	76	514	67	11,793	5,257	11,519	3,130	52,139	111	122	4,188	7,893	..	306	2,481	7·1
14,940	4,487	48	5	206	14	15,186	2,170	13,745	1,319	50,118	124	131	4,540	8,526	..	163	1,990	6·4
18,122	4,264	561	4	155	5	18,412	2,531	19,105	1,846	64,560	163	46	6,391	9,760	..	234	2,623	5·8
13,598	5,068	80	37	889	82	9,378	4,770	8,611	3,521	46,472	306	133	5,675	8,522	..	612	2,329	6·0
12,951	3,368	58	16	310	79	4,973	2,672	4,597	1,658	26,912	244	66	3,769	5,429	..	683	3,018	8·2
14,448	5,867	116	11	213	5	16,968	2,651	18,925	2,628	60,536	243	10	12,428	8,781	..	446	1,340	6·4
20,735	4,818	41	29	191	8	13,999	3,696	12,940	2,870	59,327	277	244	9,060	10,201	..	737	5,703	5·2
32,529	6,787	368	174	236	51	24,487	3,554	19,074	2,527	89,790	539	1,846	15,244	18,886	..	1,265	9,173	6·0
147,177	43,012	1,071	372	3,669	415	117,298	31,373	113,065	20,863	478,815	2,395	2,658	67,105	92,364	14	5,040	31,333	6·0

THANA STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kachha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	North Salsette	..	..	..	..	..	..	25	378	403	660	97	..	11	92	..	8	86
2	Kalyan	..	..	..	..	..	..	56	125	181	1,179	29	..	1	111	..	..	..
3	Murbad	..	..	..	..	..	..	..	..	..	688	49	..	1	32	..	..	..
4	Shahapur	..	..	..	..	..	..	..	5	5	855	16	..	1	23	..	..	237
5	Mokhada P.	..	..	..	..	..	..	..	..	..	240	4	..	..	7	..	..	72
6	Bhiwandi	..	..	..	..	..	..	73	28	100	1,097	65	..	1	96	..	8	104
7	Basein	..	..	..	..	..	..	1,617	317	1,934	1,449	58	4	3	143	77	2	11
8	Vada	..	..	..	..	..	..	..	..	..	616	25	..	..	25	..	3	89
9	Mahim	..	..	..	..	..	..	320	402	722	1,456	141	..	..	147	4	6	134
10	Dahanu	..	..	..	..	..	..	16	291	307	754	121	..	5	67	3	..	146
11	Umbergaon P.	..	..	..	..	..	..	28	115	143	915	8	..	..	75	1	..	84
	Total	..	..	..	..	..	..	2,134	1,661	3,705	9,879	663	4	23	819	85	27	963
	Bombay Suburban	..	..	..	..	..	..	294	1,164	1,458	1,487	173	..	11	178	1	..	17

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		There are no Protective Irrigation Works in this District.						
	Total ..							
	Bombay Suburban District ..	No Protective Irrigation Works.						

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Average. Total Area.	Area of holding.	Assessment holding.	Assessment per acre.	Fully assessed area. Area.	Assessment.	Incidence per acre.	Fully assessed area including alienated land by Government Villages. Population.	Incidence per head of population including alienations.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. as. p.	Rs. as. p.	Acres.	Rs.	Rs. as. p.	No.	Rs. as. p.
1	Kalyan	15,102	3,552	556	87	10	19,307	120,312	6·2	13 10 8	2 3 1	115,458	2,63,900	2 4 6	146,867	1 13 5
2	Murbad	5,140	2,521	638	113	14	8,426	106,363	7·9	14 12 6	1 2 8	100,427	1,21,523	1 3 4	55,125	2 4 0
3	Shahapur	4,633	3959	171	9	..	9,869	151,278	15·3	15 15 0	1 0 8	126,031	1,21,106	0 15 6	79,096	1 11 1
4	Bhiwandi	10,458	3,404	206	30	..	14,098	79,916	5·6	14 1 3	2 5 9	78,059	1,90,693	2 7 1	76,399	2 8 6
5	Basein	11,211	1,193	211	46	3	12,664	46,180	3·8	14 10 4	3 14 8	45,262	1,24,583	3 6 8	82,411	1 14 9
6	Vada	2,103	1,108	1,108	185	11	5,231	145,273	27·7	14 1 0	0 12 8	125,766	77,247	0 10 3	68,161	1 12 3
7	Mahim	7,562	2,025	633	138	42	10,365	87,053	8·4	15 11 7	1 13 11	83,035	1,67,780	2 0 4	92,995	1 14 3
8	Dahanu	5,678	1,796	898	323	4	8,700	189,726	21·8	17 14 4	0 13 11	182,988	1,65,723	0 14 7	159,256	1 1 6
	Total ..	61,975	20,398	5,245	1,093	91	88,794	928,601	10·4	14 3 5	1 5 9	856,416	12,62,455	1 7 3	759,916	1 11 6

Incidence of Assessment, 1920-21.

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		There are no Government Protective Irrigation Works in this District.						
	Total ..							

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Thana	Maximum 1878	..	..	..	..	..	25·27	57·41	30·68	32·16	6·07	..	..	152·09
		Minimum 1899	..	..	..	0·36	0·78	20·02	8·65	8·24	3·79	0·03	..	..	41·87
		Average	..	0·20	0·04	0·09	0·02	0·93	25·23	22·12	12·68	1·02	0·38	0·05	62·56
		Rainfall for 1922-23	..	..	..	..	..	20·53	41·31	11·45	10·58	0·34	0·20	..	92·41
2	Bombay D.	Maximum 1878	..	..	..	..	..	25·14	48·59	20·03	18·80	8·67	1·82	..	123·10
		Minimum 1905	..	..	..	..	..	3·47	15·38	3·99	5·23	0·30	3·38	..	31·75
		Average	..	0·08	0·05	0·06	0·02	0·69	20·28	27·26	15·97	11·83	2·43	0·06	79·38
		Rainfall for 1922-23	..	..	..	..	..	24·22	33·71	5·10	10·36	0·74	..	..	74·13
3	Kurla D.	Maximum 1878	..	..	..	..	..	24·86	55·14	24·55	19·92	3·73	2·84	..	131·04
		Minimum 1899	..	..	..	0·53	..	19·85	8·27	6·68	4·18	..	..	..	42·45
		Average	..	0·17	0·07	0·05	0·13	0·76	19·70	19·93	11·73	2·43	0·29	0·02	83·07
		Rainfall for 1922-23	..	..	..	..	..	24·33	34·91	6·65	11·28	0·64	0·50	..	78·31
4	Kalyan	Maximum 1878	..	..	..	..	..	20·06	49·30	35·59	28·96	5·88	..	..	139·79
		Minimum 1899	..	..	..	0·58	..	13·73	9·52	6·46	2·58	0·15	..	..	42·42
		Average	..	0·21	0·10	0·04	0·01	0·53	19·24	37·33	23·83	11·77	3·28	0·33	96·74
		Rainfall for 1922-23	..	..	..	..	..	22·16	42·00	10·32	12·85	1·01	0·21	0·62	89·17
5	Murbad	Maximum 1896	..	..	..	..	..	26·47	66·50	39·66	31·84	10·06	0·42	..	135·96
		Minimum 1877	..	1·40	0·05	..	0·99	12·42	21·14	9·58	4·54	2·04	..	..	47·31
		Average	..	0·12	0·09	0·03	0·12	0·69	15·50	36·61	27·06	13·67	3·39	0·52	97·93
		Rainfall for 1922-23	..	..	0·05	..	0·45	18·04	45·10	11·22	14·36	2·95	2·39	0·12	93·33
6	Shahapur	Maximum 1878	..	..	..	..	0·20	25·22	50·43	55·05	31·38	4·83	0·25	..	157·36
		Minimum 1899	..	..	..	0·11	0·18	14·27	13·44	11·42	6·42	0·53	..	..	54·40
		Average	..	0·12	0·06	0·04	0·05	0·81	18·42	41·10	26·61	13·20	3·64	0·38	0·11	104·54
		Rainfall for 1922-23	..	..	..	..	..	..	15·43	45·49	14·84	14·26	3·87	0·35	..	94·24
7	Mokhada P.	Maximum 1914	..	..	..	..	..	21·24	64·10	18·74	24·94	0·40	0·38	..	129·80
		Minimum 1899	..	..	..	0·60	..	18·88	9·79	5·61	1·18	..	..	..	36·06
		Average	..	0·08	0·06	0·05	0·04	0·69	14·84	36·90	26·67	11·78	1·82	0·61	0·03	95·55
		Rainfall for 1922-23	..	..	0·03	0·47	0·36	..	14·84	36·90	26·67	11·78	1·82	0·03	0·38	92·72
8	Bhiwandi	Maximum 1878	..	..	..	..	..	21·30	53·77	35·46	28·59	3·70	0·72	..	143·54
		Minimum 1899	..	..	..	0·02	0·15	21·58	10·26	5·99	3·76	0·08	..	..	41·84
		Average	..	0·20	0·06	0·06	0·27	21·18	39·42	24·14	21·23	3·43	0·39	0·07	102·03
		Rainfall for 1922-23	..	..	..	..	..	25·66	61·92	13·10	16·82	0·51	0·75	0·25	119·01
9	Basein	Maximum 1896	..	..	..	..	..	33·32	68·83	24·88	1·93	0·02	0·07	..	129·05
		Minimum 1899	..	..	..	0·14	..	17·69	6·57	1·67	4·49	..	..	..	30·76
		Average	..	0·13	0·06	0·03	0·01	0·60	18·29	26·99	15·69	11·10	2·63	0·18	0·06	75·21
		Rainfall for 1922-23	..	..	..	..	..	25·21	37·75	5·37	7·11	0·56	0·37	0·01	..	76·38
10	Vada	Minimum 1878	..	..	..	..	..	12·47	46·04	42·39	28·46	6·07	0·15	..	..	135·58
		Minimum 1899	..	..	..	0·56	..	17·16	7·51	9·53	2·42	0·20	..	..	..	42·82
		Average	..	0·15	0·04	0·03	0·03	0·57	16·32	34·62	25·34	11·38	3·16	0·27	0·04	92·21
		Rainfall for 1922-23	..	..	..	0·03	0·14	..	14·17	34·28	12·52	12·48	0·38	0·29	0·16	79·37
11	Mahim	Maximum 1878	..	..	..	..	0·06	23·28	57·62	12·27	23·04	2·63	0·31	..	..	98·21
		Minimum 1899	..	..	..	0·33	..	12·49	3·03	2·04	2·64	0·02	..	..	..	21·44
		Average	..	0·10	0·03	0·05	0·01	0·67	14·14	21·80	15·38	9·47	2·03	0·34	0·05	62·07
		Rainfall for 1922-23	..	..	..	..	..	22·81	47·87	5·47	1·45	..	..	..	..	77·60
12	Dahanu	Maximum 1878	..	..	..	..	..	20·49	54·87	16·59	24·01	4·02	0·05	..	..	120·03
		Minimum 1899	..	..	..	..	..	19·30	2·04	3·31	1·78	..	..	..	..	26·43
		Average	..	0·09	0·04	0·02	..	0·44	14·37	26·17	14·44	9·93	1·97	0·27	0·03	67·27
		Rainfall for 1922-23	..	..	0·41	..	..	..	28·49	21·54	8·93	6·85	..	0·50	..	66·72
13	Umbergaon P.	Maximum 1878	..	0·04	..	..	..	19·88	41·36	18·79	32·25	0·16	0·30	..	..	116·74
		Minimum 1905	..	..	..	..	..	1·67	16·08	5·37	5·89	0·15	0·56	..	..	29·76
		Average	..	0·10	0·08	0·03	..	0·31	13·14	23·85	13·56	9·30	1·59	0·27	0·03	62·26
		Rainfall for 1922-23	..	..	0·36	..	..	..	15·42	23·39	5·61	9·25	..	0·11	0·19	52·53

Temperature Details (Thana).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	76	83	85	92	94	86	85	84	84	89	86	84
	,, minimum ..	63	70	70	80	86	74	73	73	73	78	70	66
	Absolute maximum ..	82	88	90	98	97	96	92	86	87	93	87	95
	,, minimum ..	65	65	65	74	83	78	78	78	78	74	68	62
1914	Mean maximum ..	84	82	86	91	96	90	85	85	85	84	90	81
	,, minimum ..	62	70	70	73	79	77	70	70	71	70	69	66
	Absolute maximum ..	85	87	90	96	100	99	94	87	87	92	91	83
	,, minimum ..	65	63	68	70	78	74	70	70	70	69	65	62
1915	Mean maximum ..	73	72	90	93	96	95	85	86	84	82	80	86
	,, minimum ..	65	65	68	73	78	79	69	67	67	66	66	66
	Absolute maximum ..	85	87	90	102	99	99	92	89	89	86	86	87
	,, minimum ..	62	62	64	76	75	76	68	63	67	64	64	65
1916	Mean maximum ..	87	77	90	92	95	87	86	86	87	89	88	89
	,, minimum ..	67	65	76	78	78	78	78	78	75	78	76	67
	Absolute maximum ..	87	86	94	102	100	98	89	88	89	90	90	90
	,, minimum ..	64	62	70	78	78	78	78	76	67	76	72	65
1917	Mean maximum ..	86	88	91	95	94	88	84	86	83	86	86	83
	,, minimum ..	64	67	70	77	76	77	77	74	78	77	66	64
	Absolute maximum ..	89	92	96	98	96	96	87	89	90	89	88	84
	,, minimum ..	60	66	68	72	72	78	76	70	78	72	64	62
1918	Mean maximum ..	82	85	90	96	94	85	86	83	84	94	92	84
	,, minimum ..	62	65	66	72	77	77	77	77	76	78	72	64
	Absolute maximum ..	86	92	94	100	98	98	86	84	85	94	94	92
	,, minimum ..	60	60	64	66	70	74	76	76	72	72	72	62
1919	Mean maximum ..	79	81	85	97	93	92	84	80	83	84	86	85
	,, minimum ..	63	63	66	73	77	74	77	76	68	64	65	65
	Absolute maximum ..	82	84	98	100	102	96	88	84	88	90	90	90
	,, minimum ..	58	62	64	68	76	76	76	74	64	64	64	60
1920	Mean maximum ..	78	92	96	89	78	88	82	83	86	90	86	87
	,, minimum ..	68	64	72	72	96	81	80	67	76	77	66	65
	Absolute maximum ..	82	96	98	102	98	96	86	84	90	92	90	88
	,, minimum ..	64	62	70	74	80	80	76	76	76	72	64	64
1921	Mean maximum ..	84	86	92	91	100	89	83	82	82	81	82	84
	,, minimum ..	64	63	64	65	80	83	80	76	79	79	64	66
	Absolute maximum ..	88	92	92	92	100	100	88	84	88	92	86	88
	,, minimum ..	60	62	64	65	80	79	76	78	74	74	64	60
1922	Mean maximum ..	76	79	87	94	96	88	85	83	84	86	81	82
	,, minimum ..	66	69	70	76	84	82	83	76	78	76	74	68
	Absolute maximum ..	86	88	94	96	100	98	90	88	88	92	86	88
	,, minimum ..	60	62	66	72	80	76	76	76	74	74	64	60

Prices—Pre-war Normal.

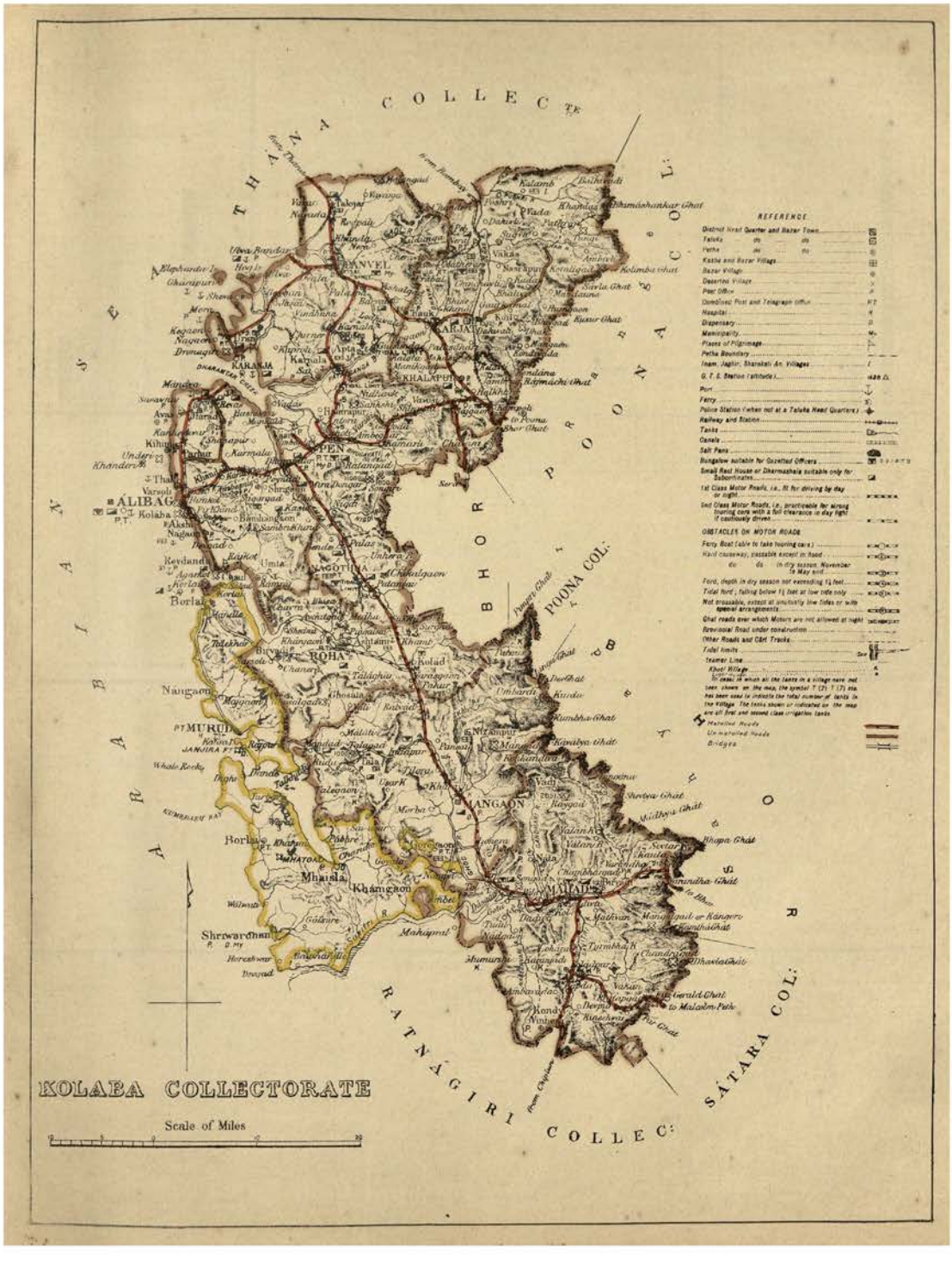
No.	Taluka.	Price in lbs. per Rupee. Rice.	Ragi.	Sa ve (Varai).	Tuvdal.	Rice straw.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	North Salsette ..	16	25	..	16	74	67	0 13 8	0 5 5	0 5 5
	Non-headquarter towns.									
2	Kalyan ..	16	25	..	15	145	68	0 14 10	0 6 6	0 5 6
3	Murbad ..	17	25	36	14	183	..	0 13 4	0 4 0	0 4 0
4	Shahapur ..	15	26	33	14	175	80	1 1 11	0 4 3	0 3 6
5	Mokhada P. ..	12	18	36	12	181	276	1 0 0	0 4 8	0 2 8
6	Bhiwandi ..	16	25	..	15	167	173	1 0 0	0 5 6	0 4 0
7	Basein ..	16	27	..	14	98	107	1 0 0	0 5 0	0 4 0
8	Vada ..	15	28	..	12	181	177	0 12 0	0 4 3	0 3 3
9	Mahim ..	16	..	..	14	512	158	1 0 0	0 5 0	0 4 0
10	Dahanu ..	16	..	..	14	120	240	1 0 0	0 4 7	0 3 6
11	Umbergaon P. ..	14	..	..	14	..	62	0 12 2	0 4 3	0 2 9
	Average of the non-headquarter towns..	16	27	36	14	196	198	0 14 6	0 5 0	0 3 11

Prices, 1922-23.

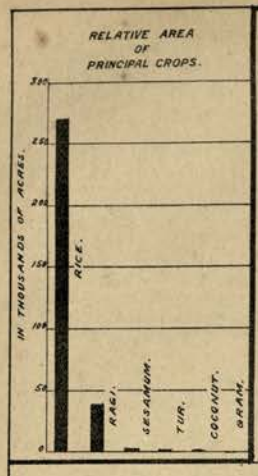
No.	Taluka.	Price in lbs. per Rupee. Rice.	Ragi.	Sa ve (Varai).	Tuvdal.	Rice straw.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	North Salsette ..	10	..	..	9	..	..	3 8 0	1 0 0	0 12 0
	Non-headquarter towns.									
2	Kalyan ..	8	..	70	45	2 8 0	0 12 0	0 8 0		
3	Murbad ..	8	..	69	..	1 0 0	0 6 0	0 6 0		
4	Shahapur ..	8	..	225	..	1 9 8	0 6 10	0 6 10		
5	Mokhada P. ..	6	34	91	191	1 12 0	0 6 0	0 4 6		
6	Bhiwandi ..	8	..	63	68	1 11 4	0 12 0	0 8 0		
7	Basein ..	8	..	58	38	1 0 0	0 15 0	0 12 0		
8	Vada ..	6	21	146	240	2 0 0	0 12 0	0 8 0		
9	Mahim ..	8	..	..	144	2 0 0	0 12 0	0 10 0		
10	Dahanu ..	6	..	72	42	2 0 0	0 8 0	0 8 0		
11	Umbergaon P. ..	6	..	..	57	1 4 0	0 6 0	0 4 0		
	Average of the non-headquarter towns..	9	24	34	7	96	99	1 4 11	0 9 7	0 7 6

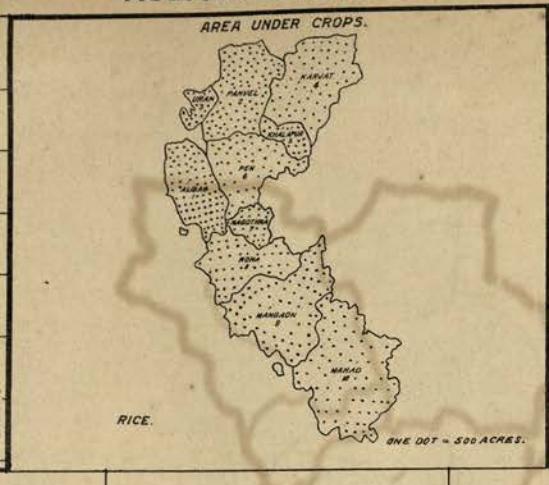
Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

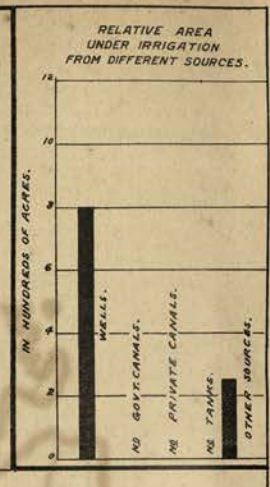
Month.	1911-12. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.
	No Relief Works were opened.																	
Average for the period ..																		

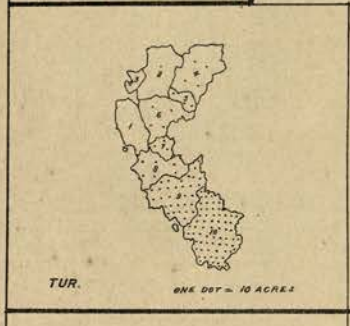

KOLABA COLLECTORATE
Scale of Miles
ARABIAN SEA
THANA COLLECTE
BHOR PROPER
POONA COL:
SÁTARA COL:
RATNÁGIRI COLLEC:
ALIBAG
PEN
KHALAPUR
KARJAT
PANVEL
KARANJA
NAGOTHNA
ROHA
MURUD
MANGAON
MAHAD
Mhaisla
Khámgaon
Shrivardhan
Borlai
Nangaon
Kolaba
Mahápral
REFERENCE
District Head Quarter and Bazar Town
Taluka do do
Pertha do do
Kasba and Bazar Village
Bazar Village
Deserted Village
Post Office
Combined Post and Telegraph Office
Hospital
Dispensary
Municipality
Places of Pilgrimage
Petha Boundary
Inam, Jaghir, Sharakati &c. Villages
G. T. S. Station (altitude)
Port
Ferry
Police Station (when not at a Taluka Head Quarters)
Railway and Station
Tanks
Canals
Salt Pans
Bungalow suitable for Gazetted Officers
Small Rest House or Dharmashala suitable only for Subordinates
1st Class Motor Roads, i.e., fit for driving by day or night
2nd Class Motor Roads, i.e., practicable for wrong touring cars with a foot clearance in day light if cautiously driven
OBSTACLES ON MOTOR ROADS
Ferry Boat (able to take touring cars)
Hard causeway, passable except in flood
do do in dry season, November 1st May end
Ford, depth in dry season not exceeding 1½ feet
Tidal ford; falling below 1½ feet at low tide only
Not crossable, except at spring low tides or with special arrangements
Ghat roads over which Motors are not allowed at night
Provincial Road under construction
Other Roads and Cart Tracks
Tidal limits
Tramway Line
Khot Village
In cases in which all the tanks in a village have not been shown on the map, the symbol T (2) T (7) etc. has been used to indicate the total number of tanks in the village. The tanks shown or indicated on the map are all first and second class irrigation tanks
Metalled Roads
Unmetalled Roads
Bridges

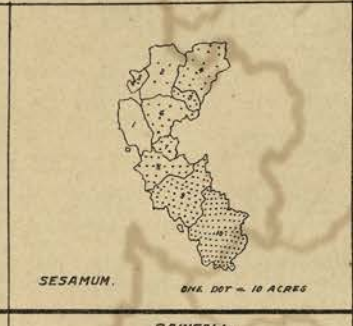
KOLABA DISTRICT.

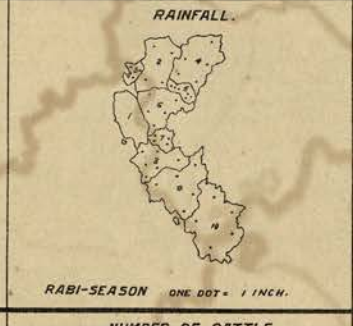


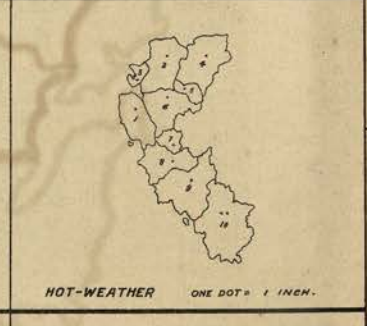


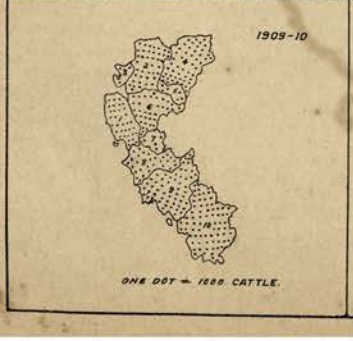


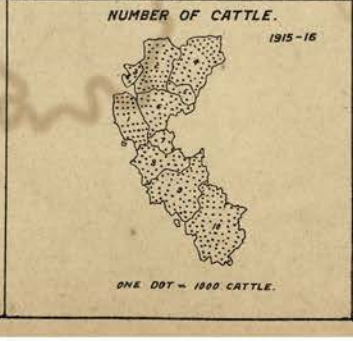












KOLABA

POSITION AND AREA

The district of Kolaba lies between 17° 51′ and 19° 8′ north latitude and 72° 51′ and 73° 45′ east longitude and occupies an area of 2,167 square miles. It is bounded on the north by the Thana district; on the east by the Western Ghats, the Bhor State and the districts of Poona and Satara; on the south and south-west by Ratnagiri; and on the west by the Janjira State and the Arabian Sea.

PHYSICAL FEATURES

Kolaba district is a rugged belt of country from fifteen to thirty miles broad, stretching south from Thana and the Bombay harbour to the foot of the Mahableswar hills, seventy-five miles south-east. Situated between the Western Ghats and the sea the district contains spurs of considerable regularity and height, running westwards at right angles to the main range, as well as isolated peaks or lofty detached ridges. A series of minor ranges also run north and south between the main range and the sea.

A few small rivers, rising in the hills to the east of the district, pass through it to the sea. The chief of these are the Ulhasa, Patalganga, Amba, Kundalika, Mandad and Savitri.

CLIMATE AND RAINFALL

There are four distinct climatic periods—the rains from June to October; the damp season in October and November on the cessation of the rains; the cold season from December to March; and the dry hot season from March to June. In the region about Alibag there is always a sea-breeze. Mahad is almost entirely cut off from the sea-breeze and is subject to much greater changes of temperature than most of the district. In the hot months, the heat is very oppressive in Karjat except on the hill-tops. The temperature varies from 65° F. in January to 92° F. in May, with an average of 80° F. The rainy season is considered the healthy period of the year.

The rainfall on the coast averages about ninety inches. Further inland it is heavier and near the Ghats is about 130 inches. In the Ghat country it is heavier still.

SOIL

The richest and most wide-spread soil is an alluvial deposit from the overlying trap-formation. It is red, yellow or black in colour, the three varieties being equally productive, but the black most suited for growing rice. Another soil is powdered laterite and clay which covers the sides and slopes of hills, and bears inferior millets (like *vari* or *nachni*), *udid* and *til*. Owing to its shallowness this is soon exhausted and requires long periods of fallow. A third soil is the clay mould found near the banks of the Nagothana, Roha and Mandad Creeks, and in the strip of land stretching from Dasgaon, ten miles west along the sides of the Savitri river. With a good supply of fresh water this soil is quite productive. Where liable to be flooded from creeks and backwaters it is called *kharpat* or salt land. A fourth soil containing marine deposits and sand, is found along the coast and is favourable to garden crops.

CROPS

From the table it will be seen that rice occupies about sixty-five per cent. of the area under crops, and that coarse grains such as *ragi* or *nachni*, *vari* and *harik* or *kodra* occupy over twenty per cent. Pulses are also of some importance. *Wal* and gram are largely cultivated as a second crop in deep and retentive soils after the paddy crop of the district. *Tur* is generally grown on the *bandhs* of the *kharif* plots. Nigerseed and sesame are cultivated to a small extent. In the coastal talukas there is much good garden cultivation and palm gardens and orchards are numerous.

IRRIGATION

The irrigation wells of the district are practically all found in Alibag taluka. There is no other kind of irrigation.

DRINKING WATER

Except in the *Kharpat* area or portion liable to be flooded from creeks and backwaters and in the interior of the southern talukas of the district where scarcity is often experienced in the hot weather the general condition of the drinking water supply is good.

CATTLE

Except the Gujarat bullocks kept by a few traders and large land-owners, almost all the cattle of the district are of local breed. The Kolaba buffaloes are smaller, blacker and smoother-skinned than those of Gujarat. Sheep are usually imported from the Deccan. Goats are kept by some Musalmans and lower class Hindus, chiefly for milk. Ponies are brought from the Deccan by Dhangars and Vanjaris. There are about three and a quarter lakhs of cattle in the district out of which nearly two-fifths are plough cattle, one-third milch cattle and one-third young stock. Sheep and goats number about thirty thousand.

FORESTS

There are about 417 square miles of forest proper and four square miles of fodder and fuel reserves in charge of the Forest Department besides 102 square miles of pasture under the Revenue Department. The forests are valuable partly on account of their vicinity to Bombay and partly because they are capable of producing big timber though nearly all have been heavily exploited in the past. The forests lying immediately along the slopes of the Western Ghats are mainly valuable from a climatic point of view and do not contain much teak. The large number of *Dalhi* assignments in the forest and the claims of the *Khots* to a one-third share of the revenue of a large area of the forests militate against the fullest development of the forest resources.

INDUSTRIES

There is practically no industry beyond fishing, and rice-husking. A very large portion of the male population supplies labour for the Bombay mills and other Bombay industries. The extraction of oil from sesame and cocoanut and the preparation of cocoanut fibre supports some families.

TRADE

The principal trade centres of the district are Pen, Panwel, Karjat, Nagothana, Revdanda, Roha, Goregaon and Mahad. The chief articles of export are rice, salt, firewood, grass, timber, vegetables, fruits and dried fish. Fruits, vegetables and grass are sent in large quantities to Bombay. The imports consist of brass pots from Poona and Nasik, grain, piece-goods, oil, butter, turmeric, sugar and molasses.

COMMUNICATIONS

The whole district is easily accessible for relief purposes as it is served by a railway in the Karjat taluka and by an extensive coast line with numerous creeks, rivers and waterways which reach far up into the inland talukas. There are also excellent roads along the main lines of communication. A steam tramway line has been opened between Neral and Matheran. At present, regular Motor Services exist between Panwel and Mumbra, Pen and Khopoli or Karjat, Alibag and Rewas and Dharamtar and Mahad. A number of roads which were formerly mere cart-tracks have been improved and some have been metalled while the construction of a few more roads is under contemplation. The communication facilities of the district have thus been considerably improved.

RELIGION

Of the total population of the district of 562,942 souls, 530,954 are Hindus, 28,354 Musalmans, 1,507 Christians, 316 Parsis and 1,758 Jews.

LANGUAGES

Marathi is the vernacular of the district and is spoken by about ninety-eight per cent. of the population. Hindi (Hindusthani) is spoken by one per cent. Marathi speakers include, besides the local Hindus, all Jews and Native Christians and a large proportion of Musalmans.

BROAD OCCUPATIONS

Speaking generally, Agriculture supports 414,768 persons or 73·7 per cent. of the population of the district. Industry (including mines) supports 28,061 persons or 5·0 per cent.; Trade and Transport 40,596 persons or 7·2 per cent. Professions and the liberal Arts 7,154 persons or 1·3 per cent. while the remainder 72,363 persons or 12·8 per cent. are dependent for their livelihood on miscellaneous occupations.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district according to occupations and in a few cases according to castes. The figures are based on the census of 1921 and represent both workers and their dependents.

Pasture and Agriculture.—Of the total population of 430,376 supported by pasture and agriculture, ordinary cultivators number 344,538; farm servants and field labourers 44,594 and 25,129 persons are dependent on income from rent of agricultural land. The raising of farm stock supports 11,481 persons mainly shepherds, herdsmen and goatherds numbering in all 11,300. Except in Mahad and Mangaon, where the country is barren and rocky, the condition of this class is quite fair.

Fishing.—Fishing supports 7,790 persons. As dried fish finds a ready market in Bombay the condition of the fishing classes is also fair.

Industry.—The wood industry supports 5,518 persons which number includes 4,112 carpenters and 1,248 basket makers. In the metal industry the workers in iron number 1,015 while workers in brass, copper, etc., amount to 846. Of potters there are 1,647; while brick and tile-makers number 674. The textile industry includes 1,465 weavers and other workers in cotton, wool, etc., at home and in factories. In the food industry may be mentioned the rice-pounders and flour-grinders 1,523; manufacturers of vegetable oils 674 and butchers 307. The building industry is mainly composed of stone-cutters and dressers 817, and brick-layers and masons 1,166. Under 'other' classes coming under this head the most important are the barbers 2,623, tailors 1,177, shoe-makers 1,007 and washermen 412. Most of the classes noted above get ample employment and reasonable wages within and without the district and as such are fairly well off.

Trade.—The trade in food-stuffs (excluding hotels) occupies a prominent position under this head. It includes grocers and sellers of oil, salt, condiments and spices 6,132; sellers of milk, butter, fish, poultry 5,388; grain and pulse dealers 805 and dealers in hay, grass and fodder 309. The trade in fuel such as firewood, cowdung-cakes, etc., which supports 10,532 persons is also important. The trade in piece-goods and other textiles affords means of livelihood to 736 persons. Traders as a class are among the more fortunate.

Depressed Classes.—These include the Mahars and Dheds 37,236, Chambhars 5,238, Bhangis 203 and Mangs 399. A considerable number of Mahars find employment as street sweepers, mill-workers, etc., in Bombay. Many Bhangis find employment as scavengers in Municipal towns. Chambhars are leather workers and get ample work and wages. Mangs as a class are poor.

Brahmans (21,336).—These are land-holders, Government servants, traders, priests, money-lenders, etc., and are quite well-to-do.

Musalmans (28,354).—These are traders, craftsmen, butchers, dyers, weavers, etc., earning a comfortable sufficiency.

Christians (1,560).—Most of these are Native Christians. They are mainly fishers, husbandmen, etc., and are fairly well-off.

Parsis (316).—These are a well-to-do class.

Jews (1,758).—These are chiefly husbandmen, oil-pressers, craftsmen, petty shop-keepers, etc., and are mostly well-off.

ECONOMIC CONDITION

There has been little change in the economic condition of the people as a whole. The bulk of the population maintains itself by tilling the soil, the condition of which is said to have deteriorated from neglect of attention. A number of people who live by agriculture are only engaged in it during the monsoon; the rest of the year they pass in other pursuits at home such as the manufacturing of salt or find labour in Bombay or other trade centres.

The salt works in Pen taluka and Uran Mahal, the Ayurvedic Pharmacy at Panvel, a number of rice-husking and polishing mills in the district, the Tata Hydro-Electric Power Works at Khopoli and Panwel, the Andhra Valley Power Works at Bhivapuri and for occasional work, the Railway, give good wages to their employees. The towns of Mahad, Goregaon and Revdanda which are the chief centres of trade in the south of the district also employ a certain number of labourers. In these towns all necessary articles of food and cloth are imported through the Ghats, and from Bombay *via* sea and are distributed in the south of this district and in the northern portion of Ratnagiri. A certain number of labourers is thus always engaged in the loading and unloading of articles of trade and as *Bandar* coolies.

The bulk of the agricultural population is dependent on capitalists who for a long time past have bought up land in the district. This transfer of land to wealthy holders still continues. The land is let out on the *nim batai* system whereby the tenant keeps half the produce and the landlord takes the other half and pays the assessment. Much land is also cultivated by high-caste land-holders with hired labour. Again, a large portion of the district is *Khoti* (see Ratnagiri account) and the *Khot* is responsible for the revenue.

Crop rents of land and salt profits have been the mainstay of a considerable number of the population, but both sources, since the tenants' strike in the year 1920-21, have been dwindling, year by year, owing to the reduction of rents and other causes.

Artisans and skilled labourers have mostly left their villages and have settled in big trade centres.

The poorest classes are the Katkaris and Thakurs who cultivate small holdings of *Varkas* land. Even if their crops were to fail entirely these classes have a means of livelihood from the sale of grass and firewood, from the cutting of forest *coupes* and from agricultural labour. In addition, their supply of edible fruits and roots, fish and game is sufficient to prevent their resorting in a year of famine or extreme drought to any sort of relief work at a distance from their homes, their forests and their cattle.

FORMER FAMINES

There is no record of anything like real famine ever having occurred in Kolaba. Scanty or excessive rainfall, high spring tides, hurricanes and locusts have at times caused considerable damage and created local distress. Details of these are given in Appendices A and B of the introduction.

In **1896-97** there was scarcity and three test works were opened before the rains of 1897; two of these never attracted more than a dozen labourers, and the third was closed after five weeks. Later, however, in the middle of September 1897, two relief works were opened. The first maintained an average of 636 persons for 36 days and the second 13 persons for 25 days. Six Local Fund works were commenced as test works, but were soon closed on account of the meagre attendance thereat.

In **1899** when the rainfall was less than half the average it was estimated that if no rain fell in September relief works would be necessary. Fortunately moderate rain fell in that month and nothing further was done. There were no famine conditions at any time in 1899-1900.

In **1918-19** owing to scanty rainfall and high prices, the latter in part a result of the Great War, acute scarcity was felt in most parts but the distress was nowhere so severe as to necessitate the opening of relief works. Some works started on ordinary wages, the opening of cheap grain shops, the grant of remissions, suspensions and *tagai* advances, the import of grain from outside and grant of relief to the destitute and infirm and other similar measures were found adequate enough to meet the situation.

FORECAST OF RELIEF WORKERS

There is nothing on which to base a forecast of the probable number of workers in the unlikely event of famine. In fact, there has been no famine in the district for well-nigh thirty years and should one occur in future, the towns of Bombay, Thana and Kalyan, the Bombay Development works and some of the Railway stations would probably receive most of the people in need of relief.

KOLABA STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total. No.	Population (1921). Density per square mile. No.	Land Revenue. Rs.	Area for which agricultural statistics are available. Villages. No.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated. Acs.	Cropped (Net). Not irrigated. Acs.	Fallows. Acs.	Total. Acs.	Area uncultivated. Available for cultivation. Acs.	Not available for cultivation. Forest. Acs.	Other. Acs.	Total. Acs.
1	Alibag ..	198	189	7	4	205	193	79,196	410	2,51,542	199	121,234	98·0	676	47,259	16,900	64,835	5,499	35,004	16,296	56,799
2	Panvel ..	241	265	33	35	274	301	101,437	337	2,77,275	272	173,133	89·3	251	71,550	21,837	93,638	5,340	48,939	25,216	79,495
3	Uran ..																				
4	Karjat ..	276	343	12	16	288	359	82,169	228	2,09,485	238	212,426	92·3	22	43,482	73,955	117,464	378	63,909	30,678	94,965
5	Pen ..	203	268	23	24	226	292	68,888	236	1,91,212	209	174,140	93·0	66	46,313	32,589	77,964	2,212	70,615	22,849	96,176
6	Roha ..	149	196	3	8	152	204	45,988	225	1,23,492	149	125,297	96·2	10	29,913	35,894	62,817	1,933	41,918	18,529	62,480
7	Mangaon ..	226	351	5	7	231	358	78,380	219	1,74,634	226	224,698	98·0	9	56,525	83,710	140,244	2,642	34,542	47,270	84,454
8	Mahad ..	248	456	3	4	251	460	105,784	232	1,50,153	251	291,330	98·9	14	67,120	124,972	192,106	904	34,715	63,609	99,228
	Total ..	1,541	2,069	86	98	1,627	2,167	562,942	207	1,37,795	1,584	1,322,261	95·3	1,048	358,162	389,453	748,668	19,408	329,642	224,543	573,593

Irrigation Abstract, 1922-23.

No.	Taluka.	Area irrigated from. Government Canals. Acs.	Private Canals. Acs.	Tanks. Acs.	Wells. Acs.	Other Sources. Acs.	Total. Acs.	Crops irrigated. Rice. Acs.	Wheat. Acs.	Barley. Acs.	Jowar. Acs.	Bajra. Acs.	Maize. Acs.	Other cereals and pulses. Acs.	Sugarcane. Acs.	Other food crops. Acs.	Cotton. Acs.	Other non-food crops. Acs.	Total. Acs.	Deduct area cropped with irrigation more than once. Acs.	Net irrigated area. Acs.
1	Alibag ..	..	..	..	524	152	676	..	..	..	..	..	..	..	..	5	628	..	69	698	22	676
2	Panvel ..	..	..	..	206	..	206	..	..	..	..	..	..	..	..	..	286	..	..	286	80	206
3	Uran ..	..	..	..	45	..	45	..	..	..	..	..	..	..	..	..	45	..	..	45	..	45
4	Karjat ..	..	..	..	2	20	22	..	..	..	..	..	..	..	..	2	28	..	5	35	13	22
5	Pen ..	..	..	..	26	40	66	..	..	..	..	..	..	..	..	..	66	..	..	66	..	66
6	Roha ..	..	..	..	..	10	10	..	..	..	..	..	..	..	..	7	2	..	6	15	5	10
7	Mangaon ..	..	..	..	..	9	9	..	..	..	..	..	..	..	..	..	9	..	..	9	..	9
8	Mahad ..	..	..	..	..	14	14	..	..	..	..	..	..	..	..	..	14	..	..	14	..	14
	Total ..	..	..	..	803	245	1,048	..	..	..	..	..	..	..	..	14	1,078	..	76	1,168	120	1,048

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total. No.	Population (1911). Density per square mile. No.	Land Revenue. Rs.	Area for which agricultural statistics are available. Villages. No.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated. Acs.	Cropped (Net). Not irrigated. Acs.	Fallows. Acs.	Total. Acs.	Area uncultivated. Available for cultivation. Acs.	Not available for cultivation. Forest. Acs.	Other. Acs.	Total. Acs.
1	Alibag ..	198	189	7	4	205	193	80,862	419	2,50,377	199	121,234	98·0	845	40,878	22,620	64,343	6,531	34,960	16,223	57,714
2	Panvel ..	241	266	39	35	280	301	108,915	358	2,76,093	278	173,162	89·8	200	60,362	32,498	93,060	6,324	47,996	25,528	79,848
3	Uran ..																				
4	Karjat ..	276	343	12	16	288	359	86,224	240	1,64,918	238	212,426	92·3	3	41,742	75,796	117,541	458	63,950	30,666	94,974
5	Pen ..	203	268	23	24	226	292	70,916	239	1,91,152	209	174,140	93·0	32	50,869	27,078	77,979	2,613	70,539	22,840	95,992
6	Roha ..	149	196	3	8	152	204	46,227	227	1,14,516	149	125,298	96·2	15	27,451	35,363	62,829	2,031	41,847	18,569	62,466
7	Mangaon ..	226	351	5	7	231	358	84,208	235	1,74,543	226	224,698	98·0	9	57,429	82,788	140,230	2,576	34,683	47,250	84,509
8	Mahad ..	248	455	3	4	251	459	118,514	258	1,49,973	251	291,358	98·8	3	68,383	123,699	192,085	826	34,681	63,621	99,108
	Total ..	1,541	2,068	92	98	1,633	2,166	594,166	274	1,32,732	1,598	1,322,346	95·3	1,111	347,123	399,844	748,078	21,214	328,538	224,716	574,468

Irrigation Abstract, 1918-19.

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
1	Alibag ..	..	..	..	522	174	696	..	..	..	..	..	..	..	..	2	420	..	275	697	1	696
2	Panvel ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	Uran ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Karjat ..	..	..	..	..	..	..	Separate figures not available.													
5	Pen ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Roha ..	..	..	..	1	14	15	..	..	..	..	..	..	..	..	9	4	..	2	15	..	15
7	Mangaon ..	..	..	..	..	12	12	..	..	..	..	..	..	..	..	..	12	..	..	12	..	12
8	Mahad ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	..	..	..	523	200	723	..	..	..	..	..	..	..	..	11	436	..	277	724	1	723

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari. Acs.	Bajri. Acs.	Rice. Acs.	Wheat. Acs.	Coarse grains. Acs.	Others. Acs.	Total. Acs.	Pulses. Tur. Acs.	Gram. Acs.	Mug and Udid. Acs.	Math, Kulith, etc. Acs.	Others. Acs.	Total. Acs.	Orchard and Garden Produce. Vegetables. Acs.	Green Fodder. Acs.	Fruit trees. Acs.	Total. Acs.	Drugs and Narcotics. Tobacco. Acs.	Others. Acs.	Total. Acs.	Condiments and Spices. Acs.	Sugarcane. Acs.	Oil Seeds. Sesamum. Acs.	Linseed. Acs.	Groundnut. Acs.	Safflower-seed. Acs.	Nigerseed. Acs.	Others. Acs.	Total. Acs.	Fibres. Dyes. Acs.	Cotton. Acs.	Others. Acs.	Total. Acs.	Miscellaneous. Acs.	Gross area cropped. Acs.	Deduct area cropped twice. Acs.	Remainder cropped. net area. Acs.
1	Alibag ..	..	..	50,175	..	378	..	50,553	..	11	132	..	8	151	1,621	..	248	1,869	..	473	475	30	18	4	..	..	..	1,178	1,182	..	..	81	81	5,256	56,615	1,680	57,935
2	Panvel ..	..	..	61,490	..	1,097	..	62,257	14	95	108	..	..	217	1,123	..	309	1,432	..	2	2	61	..	50	..	..	..	10	60	..	..	29	29	68,799	82,962	1,161	81,801
3	Uran ..	..	..	35,170	..	1,060	..	36,230	111	1	1	19	9	141	990	..	6	996	..	..	..	45	2	240	..	..	..	273	513	..	..	56	56	2,308	41,624	1,115	43,509
4	Pen ..	..	..	34,124	..	3,656	..	37,780	72	3	98	..	4	177	621	..	3	624	..	2	2	2	13	156	..	..	..	54	210	..	..	13	13	9,040	48,046	967	47,079
5	Roha ..	..	..	25,159	..	1,310	..	26,469	63	10	206	..	..	279	2,176	..	9	2,185	..	..	..	4	7	174	..	..	..	98	279	..	..	13	13	..	28,945	2,347	26,923
6	Mangaon ..	..	..	32,418	..	23,904	..	56,322	345	45	1,373	..	8	1,771	1,519	..	4	1,523	..	..	..	31	..	1,538	..	..	..	108	666	..	..	2	2	..	60,223	1,689	58,534
7	Mahad ..	..	..	34,422	..	29,912	..	64,334	765	5	2,214	..	..	2,984	855	..	1	856	..	..	..	89	..	1,057	..	..	..	13	1,059	..	..	1	1	..	69,320	2,186	67,134
	Total ..	..	..	269,028	..	69,317	..	338,345	1,297	280	4,420	31	97	6,125	8,684	..	576	9,260	..	475	475	262	34	2,214	..	..	..	551	1,196	3,961	..	..	193	193	35,405	394,060	10,845	383,215

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari. Acs.	Bajri. Acs.	Rice. Acs.	Wheat. Acs.	Ragi. Acs.	Maize. Acs.	Coarse grains. Acs.	Others. Acs.	Total. Acs.	Pulses. Tur. Acs.	Gram. Acs.	Mug and Udid. Acs.	Math, Kulith, etc. Acs.	Others. Acs.	Total. Acs.	Orchard and Garden Produce. Vegetables. Acs.	Green Fodder. Acs.	Fruit trees. Acs.	Total. Acs.	Drugs and Narcotics. Tobacco. Acs.	Others. Acs.	Total. Acs.	Condiments and Spices. Acs.	Sugarcane. Acs.	Oil Seeds. Sesamum. Acs.	Linseed. Acs.	Cocoa-nut. Acs.	Groundnut. Acs.	Safflower-seed. Acs.	Nigerseed. Acs.	Others. Acs.	Total. Acs.	Dyes. Acs.	Fibres. Cotton. Acs.	Others. Acs.	Total. Acs.	Miscellaneous. Acs.	Gross area cropped. Acs.	Deduct area cropped twice. Acs.	Remainder cropped. net area. Acs.
1	Alibag ..	..	1	..	..	38,527	..	73	..	39,130	1	17	101	..	5	124	941	..	..	1,348	2,289	..	..	..	495	495	83	12	..	1	..	30	35	..	55	55	3,524	45,732	1,029	44,723
2	Panvel ..	..	..	..	..	54,929	..	63	1,577	55,958	..	1	91	52	2	274	418	88	..	302	390	..	..	..	..	..	61	2	71	..	..	..	73	..	20	20	13,645	70,543	667	69,876
3	Karjat ..	..	..	..	..	35,008	..	3,616	2,194	40,818	21	20	197	..	146	389	855	..	..	..	855	..	..	..	..	..	16	1	304	..	..	161	466	..	42	42	100	41,921	176	41,745
4	Pen ..	..	..	..	..	39,310	..	2,774	..	42,084	47	..	81	13	141	240	240	..	..	4	244	..	..	..	..	..	2	1	179	..	..	36	218	..	56	56	10,225	54,918	241	54,677
5	Roha ..	..	..	..	..	21,223	..	3,014	..	27,089	33	19	152	..	951	1,155	11	..	..	6	17	..	..	..	..	..	3	9	154	..	..	113	279	..	7	7	..	28,552	824	27,728
6	Mangaon ..	..	..	..	..	32,146	..	13,065	..	56,442	56	4	1,095	..	33	1,168	647	..	..	..	647	..	..	..	..	..	26	..	696	..	..	..	722	..	..	..	..	59,992	785	59,207
7	Mahad ..	..	..	..	..	14,126	..	14,162	..	68,089	820	..	2,196	..	3	5,016	3	544	..	..	547	..	..	..	..	..	26	27,024	..	..	..	31	1,055	..	..	..	..	72,745	840	71,905
	Total ..	..	1	..	..	255,053	..	40,628	..	133,638	2,229	331,550	1,019	151	3,814	16	1,411	6,411	2,015	544	1,664	4,223	..	495	495	217	322	428	..	20	3	..	342	90	2,823	..	1	179	180	27,492	373,423	4,562	368,861

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Carts. Large, i.e., of over 2 cattle.	For passengers.	For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Alibag ..	9,206	3,027	42	20	2,338	237	6,112	4,014	5,334	2,789	33,119	286	4,522	2,982	5,409	..	1,326	2,386	7·8
2	Panvel ..	15,342	5,533	58	4	737	89	11,070	4,362	11,836	2,958	56,961	207	253	4,722	9,109	1	404	2,071	7·5
3	Karjat ..	13,938	7,216	106	59	4,08	37	16,178	3,000	17,027	2,278	10,354	113	226	3,163	9,405	..	268	2,104	4·1
4	Pen ..	9,108	3,584	61	20	393	60	9,100	3,464	9,631	2,964	38,385	94	200	2,343	5,487	..	734	1,029	7·1
5	Roha ..	7,921	3,564	15	3	70	..	6,428	1,907	6,086	1,277	27,369	56	2,149	1,554	4,864	..	173	658	4·7
6	Mangaon ..	14,310	5,958	34	11	55	21	12,841	3,001	10,943	1,905	49,141	41	1,069	3,014	8,585	..	155	931	5·5
7	Mahad ..	19,262	6,787	3	..	127	1	18,671	5,334	16,429	3,509	70,123	55	344	2,866	12,111	..	151	769	5·2
	Total ..	88,087	35,669	347	117	4,107	445	80,400	25,182	77,291	17,767	329,452	830	8,763	20,644	54,914	..	12,691	9,948	6·6

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Ploughs. Small.	Carts. Large, i.e., of over 2 cattle.	For passengers.	For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Alibag ..	10,888	3,338	78	22	1,043	134	6,750	3,834	6,181	2,882	35,150	277	369	3,781	6,197	5	1,367	2,831	6·9
2	Panvel ..	13,922	5,490	28	10	411	92	9,994	3,969	9,015	2,381	45,272	224	117	6,581	8,767	..	949	2,156	5·7
3	Karjat ..	13,634	8,485	52	9	190	29	14,488	3,207	15,638	2,300	57,993	84	104	5,789	9,998	..	195	1,740	3·9
4	Pen ..	8,981	3,723	0	5	315	9	8,466	3,115	7,956	1,964	34,581	114	31	3,419	4,967	..	215	777	6·8
5	Roha ..	8,281	4,347	3	5	31	3	6,445	2,096	6,090	1,510	28,792	16	203	2,491	5,618	..	163	440	4·7
6	Mangaon ..	16,527	8,280	28	5	193	14	14,700	3,454	13,609	2,938	59,188	33	33	5,350	10,857	..	141	835	5·1
7	Mahad ..	20,133	8,921	13	2	152	13	19,986	5,764	17,619	4,023	76,626	30	13	4,396	14,097	..	94	721	5·0
	Total ..	92,376	42,580	212	58	2,335	314	80,746	25,411	76,106	17,427	337,562	773	870	31,607	60,443	5	2,526	9,500	5·2

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Alibag	..	..	..	..	..	..	345	1,101	1,446	1,599	442	4	19	138	3	16	23
2	Panvel	..	..	..	..	..	..	55	62	117	886	215	..	36	135	..	7	29
3	Karjat	..	..	..	..	..	..	..	9	9	953	19	..	7	79	1	139	118
4	Pen	..	..	..	..	..	..	9	22	31	809	231	2	163	167	..	56	143
5	Roha	..	..	..	..	..	..	2	..	2	499	61	..	2	47	..	28	54
6	Mangaon	..	..	..	..	..	..	..	..	1	742	26	..	4	73	..	168	56
7	Mahad	..	..	..	..	..	..	..	..	..	1,067	15	..	20	21	..	45	6
	Total	..	..	..	..	..	..	411	1,191	1,602	6,560	803	6	256	680	4	454	411

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
		There are no Government Protective Irrigation Works in this District.						
	Total ..							

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acs.	Acs.	Rs. a. p.	Rs. a. p.
1	Alibag ..	10,963	1,699	309	49	5	13,029	62,204	4·8	19 12 3	4 2 2
2	Panvel ..	13,065	2,684	341	38	3	16,151	68,999	5·5	17 3 3	3 1 10
3	Karjat ..	7,733	2,929	664	125	4	11,497	115,746	9·9	19 1 4	2 11 8
4	Pen ..	4,900	1,499	334	74	8	6,515	61,773	9·5	29 5 7	3 1 6
5	Roha ..	1,568	529	149	32	1	2,279	22,032	9·7	25 9 6	2 12 8
6	Mangaon ..	2,224	575	200	94	1	3,094	22,336	7·2	13 9 3	1 11 10
7	Mahad ..	4,426	2,251	479	77	1	7,234	55,131	7·6	7 8 3	0 15 9
	Total ..	44,659	12,166	2,478	489	23	59,795	428,221	7·1	18 1 11	2 8 6

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Fully assessed Area. Assessment.	Fully assessed Area. Incidence per acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Fully assessed Area including Alienated Land in Government Villages. Incidence per head of population including alienations.
		Acs.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Alibag ..	62,632	257,436	4 1 9	77,704	3 5 0
2	Panvel ..	78,979	276,467	3 1 8	101,437	2 11 7
3	Karjat ..	115,154	209,480	1 13 2	82,169	2 9 3
4	Pen ..	90,823	186,223	2 0 9	68,888	2 11 3
5	Roha ..	21,905	50,617	2 12 3	16,910	3 0 11
6	Mangaon ..	22,234	38,920	1 11 10	18,464	2 1 9
7	Mahad ..	55,249	54,180	0 15 9	25,657	2 1 11
	Total ..	447,076	1,083,518	2 6 9	391,229	2 12 4

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
		There are no Government Protective Irrigation Works in this District.						
	Total ..							

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Alibag ..	Maximum 1878 ..	0·03	..	0·26	..	9·43	30·13	52·61	39·91	15·96	4·56	0·82	..	144·92
		Minimum 1916 ..	..	..	..	..	0·83	9·70	6·64	6·26	2·51	..	..	..	34·71
		Average ..	0·08	0·04	0·03	0·10	3·67	22·78	28·68	16·75	12·37	2·60	0·39	0·04	85·29
		Rainfall for 1922-23 ..	..	0·12	..	..	..	36·41	8·94	10·58	0·28	0·21	0·07	..	76·75
2	Panvel ..	Maximum 1892 ..	..	..	..	..	6·11	9·55	51·54	58·34	33·08	5·15	0·41	..	158·18
		Minimum 1918 ..	..	..	0·04	..	6·92	7·84	12·51	18·75	1·41	..	..	..	47·47
		Average ..	0·10	0·07	0·02	0·09	0·58	20·52	42·71	27·17	14·13	3·76	0·48	0·04	109·82
		Rainfall for 1922-23 ..	..	0·07	0·04	..	..	22·53	52·77	10·45	17·03	3·27	1·12	0·09	107·37
3	Uran P. ..	Maximum 1878 ..	..	..	..	..	6·08	24·69	61·53	30·10	18·83	5·95	4·38	..	145·56
		Minimum 1918 ..	..	..	1·20	..	8·33	8·13	8·58	8·84	2·91	..	..	..	37·99
		Average ..	0·11	0·17	0·08	0·09	0·58	20·10	28·99	19·36	11·70	2·19	0·26	0·02	83·65
		Rainfall for 1922-23 ..	..	..	..	..	..	23·34	36·49	6·81	7·54	0·53	0·15	0·07	74·93
4	Karjat ..	Maximum 1896 ..	..	..	..	3·62	0·49	32·63	90·09	58·63	2·75	0·44	0·65	0·04	185·72
		Minimum 1899 ..	..	..	..	..	0·17	21·12	14·89	34·48	4·89	0·38	..	..	59·55
		Average ..	0·08	0·04	0·07	0·14	0·73	26·13	48·64	44·54	16·73	4·51	0·59	0·09	128·38
		Rainfall for 1922-23 ..	..	0·08	0·37	..	0·20	21·95	50·70	16·60	17·48	1·06	2·17	..	110·61
5	Matheran D. ..	Maximum 1923 ..	..	..	..	1·48	0·57	13·36	149·58	157·56	122·02	5·61	..	..	448·16
		Minimum 1899 ..	..	..	..	..	0·42	40·42	26·66	23·02	5·94	0·45	..	..	98·59
		Average ..	0·08	0·06	0·03	0·09	1·12	35·30	81·21	58·06	26·09	6·09	0·91	0·06	209·12
		Rainfall for 1922-23 ..	..	0·06	1·00	..	..	37·82	86·24	38·68	30·10	1·80	2·38	..	198·08
6	Khalapur P. ..	Maximum 1914 ..	..	..	..	..	2·68	24·88	77·02	44·75	25·82	2·61	0·41	..	175·49
		Minimum 1918 ..	..	..	0·10	..	2·05	15·58	22·79	17·07	2·87	..	0·12	..	56·42
		Average ..	0·09	0·05	..	0·08	0·80	22·68	45·68	31·83	17·23	4·81	0·70	0·05	123·39
		Rainfall for 1922-23 ..	..	0·02	0·88	..	..	30·24	47·41	12·66	10·17	1·65	1·85	..	110·90
7	Pen ..	Maximum 1878 ..	..	..	..	..	3·75	23·94	54·58	50·32	21·05	10·74	1·98	..	162·61
		Minimum 1918 ..	..	..	0·57	..	..	20·56	11·55	17·75	2·57	..	0·13	..	46·08
		Average ..	0·09	0·04	0·03	0·09	0·61	23·25	40·65	28·15	15·89	3·80	0·65	0·05	113·30
		Rainfall for 1922-23 ..	..	0·02	..	..	..	25·45	61·59	11·02	14·89	2·12	2·14	0·02	117·23
8	Nagothana P. ..	Maximum 1917 ..	..	1·12	..	..	0·95	29·60	35·56	42·54	26·32	19·33	0·02	..	155·44
		Minimum 1905 ..	..	..	..	..	..	6·08	38·58	14·05	8·29	1·73	0·66	..	70·39
		Average ..	0·03	0·09	..	0·02	0·65	23·72	39·72	23·46	13·30	3·57	0·66	..	109·23
		Rainfall for 1922-23 ..	..	0·23	..	..	..	24·46	50·07	14·40	12·84	1·96	2·10	..	105·56
9	Roha ..	Maximum 1878 ..	..	..	..	..	2·27	24·27	52·65	50·27	26·57	6·47	1·93	..	162·16
		Minimum 1899 ..	..	..	..	4·78	0·20	17·10	8·42	13·31	6·34	0·02	..	..	50·17
		Average ..	0·06	0·04	0·03	0·14	0·75	26·51	44·86	26·32	14·49	5·24	0·83	0·05	121·52
		Rainfall for 1922-23 ..	..	..	0·48	..	..	28·42	59·77	12·31	13·77	2·53	1·48	..	118·76
10	Mangaon ..	Maximum 1878 ..	..	..	..	8·90	0·84	28·89	57·99	58·64	27·56	8·34	4·42	..	185·84
		Minimum 1899 ..	..	..	..	..	0·47	22·47	11·01	12·55	7·95	1·30	..	..	64·22
		Average ..	0·04	0·03	0·01	.034	0·87	26·11	45·98	29·93	16·81	4·10	0·76	0·09	124·55
		Rainfall for 1922-23 ..	..	0·04	..	..	..	31·91	55·95	12·63	13·23	1·75	1·50	..	116·81
11	Mahad ..	Maximum 1896 ..	..	..	..	6·84	0·74	34·91	82·38	49·50	2·55	2·40	0·85	..	171·69
		Minimum 1899 ..	..	..	..	..	..	18·26	12·16	11·28	8·31	5·21	..	..	65·74
		Average ..	0·05	0·04	0·02	0·42	1·02	27·09	48·59	31·22	16·00	4·21	0·98	0·10	130·08
		Rainfall for 1922-23 ..	..	..	..	0·13	..	32·58	56·52	14·99	13·16	6·54	1·75	..	125·02

Temperature Details (Alibag).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		F.	F.	F.	F.	F.	F.	F.	F.	F.	F.	F.	F.
1913 ..	Mean maximum ..	87	84	86	90	92	86	81	88	85	90	90	86
	,, minimum ..	63	68	68	73	80	78	74	77	78	73	70	66
	Absolute maximum ..	92	89	92	94	95	95	86	88	91	96	96	93
	,, minimum ..	58	58	61	68	76	73	71	75	73	71	63	57
1914 ..	Mean maximum ..	89	89	88	86	92	89	84	83	85	94	94	90
	,, minimum ..	66	68	68	71	81	80	75	77	77	76	73	67
	Absolute maximum ..	94	92	94	93	93	94	89	88	89	101	99	95
	,, minimum ..	42	59	64	70	74	72	75	71	70	69	68	59
1915 ..	Mean maximum ..	87	84	84	91	93	90	86	85	85	88	92	87
	,, minimum ..	61	64	71	77	81	80	77	76	75	73	73	62
	Absolute maximum ..	95	92	102	101	96	95	91	88	89	96	95	97
	,, minimum ..	59	57	66	75	76	75	73	72	70	70	68	61
1916 ..	Mean maximum ..	87	87	90	91	91	86	85	84	84	87	91	87
	,, minimum ..	65	65	72	81	80	78	78	77	76	76	74	68
	Absolute maximum ..	93	93	98	99	95	92	90	88	92	92	94	96
	,, minimum ..	60	60	67	73	76	75	75	74	74	72	69	61
1917 ..	Mean maximum ..	86	88	91	92	94	91	89	83	83	85	85	84
	,, minimum ..	66	65	68	73	76	76	77	75	77	74	69	66
	Absolute maximum ..	90	95	100	99	104	105	99	87	87	93	98	82
	,, minimum ..	62	59	62	69	71	72	72	66	73	70	61	62
1918 ..	Mean maximum ..	87	86	86	90	92	88	86	85	85	90	90	85
	,, minimum ..	66	69	69	73	78	77	76	76	77	77	69	71
	Absolute maximum ..	97	93	93	95	95	94	89	86	89	93	94	89
	,, minimum ..	60	64	63	69	73	74	71	73	72	70	66	62
1919 ..	Mean maximum ..	87	83	86	87	92	87	83	82	81	87	87	85
	,, minimum ..	65	65	70	71	79	80	71	74	76	75	73	69
	Absolute maximum ..	89	89	90	95	94	94	89	86	90	95	88	88
	,, minimum ..	60	60	61	70	77	70	70	74	74	73	66	63
1920 ..	Mean maximum ..	85	85	88	88	93	84	83	83	84	88	91	86
	,, minimum ..	71	68	73	75	80	79	75	77	77	74	72	67
	Absolute maximum ..	90	95	96	94	98	90	85	89	93	93	93	92
	,, minimum ..	64	59	67	70	78	75	73	75	75	70	66	63
1921 ..	Mean maximum ..	85	83	90	91	93	88	83	82	82	87	87	86
	,, minimum ..	68	66	72	76	80	79	78	75	75	75	69	67
	Absolute maximum ..	88	97	97	99	95	95	89	83	84	99	91	92
	,, minimum ..	63	62	68	72	77	74	74	70	72	70	66	62
1920 ..	Mean maximum ..	84	85	89	91	Details not available							
	,, minimum ..	67	69	71	76								
	Absolute maximum ..	89	91	96	95								
	,, minimum ..	63	62	62	69								

Prices—Pre-war Normal.

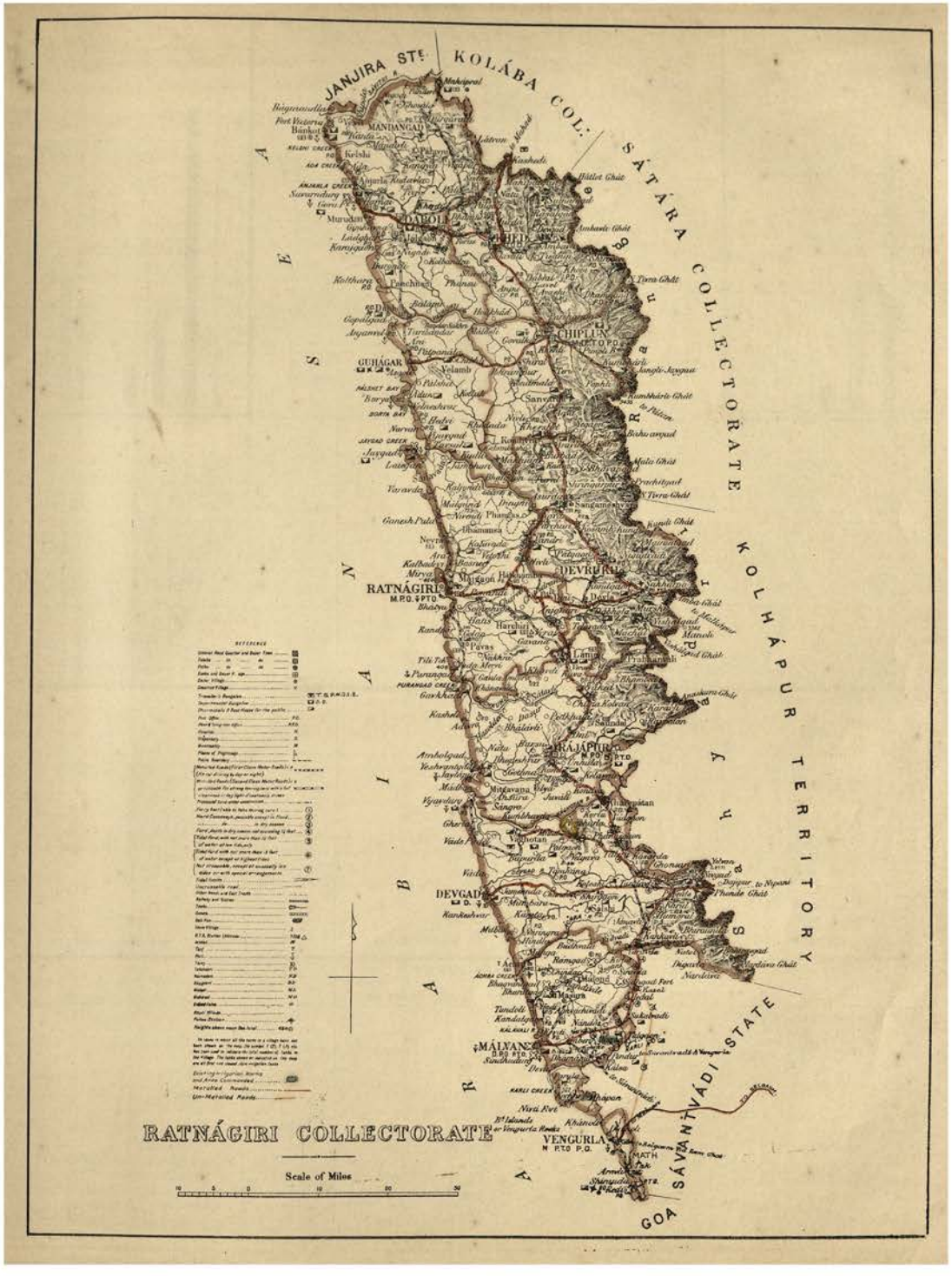
No.	Taluka.	Price in lbs. per Rupee. Rice.	Nachni (Ragi).	Tuvdal.	Rice straw.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
							Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter town.								
1	Alibag ..	18	..	13	..	..	0 15 2	0 4 3	0 4 8
	Non-headquarter towns.								
2	Panvel ..	17	..	14	217	152	1 3 6	0 7 9	0 4 11
3	Uran P. ..	16	..	14	..	320	1 1 0	0 8 0	0 4 4
4	Karjat ..	15	26	15	223	..	0 12 0	0 6 0	0 4 0
5	Khalapur P. ..	16	..	14	..	..	0 12 0	0 6 0	0 4 0
6	Pen ..	16	28	14	213	175	0 14 6	0 7 8	0 3 9
7	Nagothna ..	16	27	14	390	..	0 14 0	0 4 11	0 3 9
8	Roha ..	16	28	14	175	274	0 12 7	0 7 0	0 3 3
9	Mangaon ..	18	32	15	284	264	0 9 7	0 3 4	0 2 3
10	Mahad ..	16	28	13	244	284	0 12 0	0 3 4	0 4 0
	Average of the non-headquarter towns.	16	28	14	237	245	0 13 7	0 4 9	0 3 9

Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Rice.	Nachni.	Tuvdal.	Rice straw.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Alibag ..	11	..	8	41	..	1 8 0	0 10 0	0 10 0
2	Panvel ..	11	..	9	107	64	2 0 0	1 3 4	0 8 0
3	Uran P. ..	10	..	10	26	50	1 2 0	0 12 0	0 6 0
4	Karjat ..	12	37	9	90	34	2 8 0	0 12 0	0 8 0
5	Khalapur P. ..	9	..	8	..	..	2 0 0	1 0 0	0 8 0
6	Pen ..	11	22	10	128	66	1 4 0	0 12 0	0 6 0
7	Nagothna ..	10	..	10	..	..	1 0 0	0 8 0	0 6 0
8	Roha ..	11	22	8	..	..	1 8 0	0 12 0	0 8 0
9	Mangaon ..	10	22	8	128	116	1 8 0	0 10 0	0 8 0
10	Mahad ..	11	22	9	142	107	1 0 0	0 8 0	0 8 0
	Average for the period.	11	21	9	110	73	1 8 5	0 12 1	0 8 6

Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

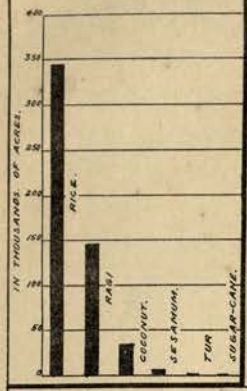
Month.	1911-12. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.
	No Relief Works were started.						No Relief Works were started.						No Relief Works were started.					



RATNÁGIRI COLLECTORATE

RATNAGIRI DISTRICT.

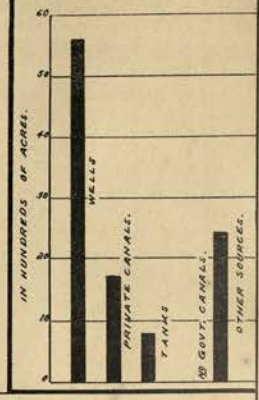
RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER CROPS.

RICE. ONE DOT = 100 ACRES.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



TUR. ONE DOT = 1 ACRE.

SUGAR-CANE. ONE DOT = 10 ACRES.

NIGER-SEED. ONE DOT = 20 ACRES.

RAINFALL.

KHARIF-SEASON ONE DOT = 2 INCHES.

RABI-SEASON ONE DOT = 2 INCHES.

HOT-WEATHER ONE DOT = 2 INCHES.

NUMBER OF CATTLE.

1909-10

ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.

RATNAGIRI

POSITION AND AREA

The district of Ratnagiri lies between 15° 44′ and 18° 4′ north latitude and 73° 2′ and 73° 57′ east longitude and covers an area of very nearly four thousand square miles. It is bounded on the north by the State of Janjira and Kolaba district; on the east by Satara district and the State of Kolhapur; on the south by the State of Savantvadi and the Portuguese Possessions of Goa; and on the west by the Arabian Sea.

PHYSICAL FEATURES

Ratnagiri may be described generally as rocky and rugged. Near the coast it consists of bare elevated plateaux, intersected by numerous creeks and navigable rivers, flowing between steep and lofty hills. These rivers and creeks have along their banks the chief seaports and almost all the fertile land of the district. Ten miles or so inland the country becomes more open, but a little farther it is occupied by spurs of the Western Ghats. This range itself forms the continuous eastern boundary, running parallel to the coast at distances varying from thirty to forty-five miles. It varies in height from two thousand to three thousand feet, though some of the peaks attain an altitude of four thousand feet.

RIVERS

The principal rivers of the district are the Savitri or Bankot river forming the northern boundary of the district; the Vashishti parallel to and about thirty miles south of the Savitri and the largest and the most important in the district, and the Shastri rising near Prachitgad and falling into the ocean near Jaygad. The other rivers are the Muchkundi, Vagotna, Devgad, Achra, Kalagli and the Kagli but they are of comparatively minor importance. The character of the streams that form the river system of Ratnagiri varies little. They rise in the main range or in the spurs of the Western Ghats, and traversing the country along narrow deep cut ravines enter the Arabian Sea after winding courses of seldom more than forty miles. The general flow is from east to west with sometimes a tendency to the south. The abruptness of their windings is a notable feature of the Ratnagiri rivers. Though of comparatively small size and volume and ill suited for irrigation, they are of great local value, being navigable at all times for ten to twelve miles, and for twenty miles or more at high tide; and having estuaries affording safe anchorage for coasting craft. They formerly provided an easy outlet for the produce of the country both below and above *Ghats*. Trade has now been largely diverted above Ghats by railways, and the coast ports have diminished in importance. The silting of the creeks has also been responsible for the diminution of trade in this district.

CLIMATE AND RAINFALL

The climate of the district, though moist and relaxing, is on the whole healthy. The rainfall is abundant and comparatively regular. The south-west monsoon breaks early in June and continues with little intermission till the middle or end of August when it diminishes in force. Rain, however, continues to fall till the end of October. Along the coast the average annual rainfall varies from eighty to one hundred and five inches, but farther inland it rises to over one hundred and forty inches and in the Ghats is still heavier.

SOIL

There are four chief kinds of soil in the district: (1) rice, (2) garden, (3) alluvial or *rabi* and (4) upland (*varkas*). Of rice lands the chief sorts are *mali, panthal, kuryat, pulanval* and *kharvat*. *Mali* lands are the open tracts in the bottoms of valleys. It is the richest soil in the district and generally holds moisture enough for a second unwatered crop. *Panthal* soil is found in low-lying lands, and yields a second crop without watering. *Kuryat* is the rice soil on the slopes and at the foot of hills with more gravel and less clay. *Pulanvat* or sandy soil is found only on the coast and along estuaries. Barren in ordinary or irregular seasons, with a heavy and steady rainfall, it yields good crops. *Kharvat* or salt, is rice land near the coast and on the banks of tidal creeks. Always more or less charged with salt, it grows only a coarse red rice.

Garden or *bagayat* lands are (1) *agri* or salt and (2) *dongri* or hill. The first variety is always found on the coast and on the banks of tidal rivers. The cocoa-nut and the betel palm flourish in this soil. The lands of the second variety are well-watered spots on the lower slopes of valleys.

The alluvial soil (*rabi*) near the banks of rivers is usually very deep and fine. It yields crops of pulse, sugarcane and hemp and in the South with the help of water an additional hot-weather crop of *ragi*.

Varkas soils are the uplands, light and poor, where the coarse grains, *nachni, vari* and *harik* are grown. A three or four years' rotation of crop is taken on these lands after which they lie fallow for some years.

CROPS

Rice and the coarse grains are the only cereals and are by far the most important crops of the district. *Kulith* is the most important of the pulses but *udid* and *val* are also common. These are grown as second crops. Nigerseed is almost the only oilseed and *san* or Bombay hemp the only fibre crop. A little sugarcane is grown. Condiments and spices are represented mainly by chillies and by areca (betelnut). It should be added that the tables by no means represent the cultivation of the district, as only one-fourth of the villages furnish crop statistics.

CATTLE

The pasturage of the district being poor and devoid of nutriment, the local breed of cattle is inferior. Sheep imported from the grazing grounds above the *Ghats* deteriorate rapidly and horses quickly lose condition. Goats though of inferior breed appear to thrive but they too have suffered severely during the famine of 1918-19, their number at the cattle census of 1919-20 being reduced to half since the preceding cattle census in 1915-16. The only imported breed of cows or buffaloes is from Jafrabad in South Kathiawar. Sheep are kept by butchers, and goats by many Musalmans for milk. Of the total number of cattle nearly one-half are plough cattle, nearly one-fourth milch cattle and as many young stock. In milch cattle buffaloes number only two-fifths of the cows.

IRRIGATION

There are no Protective Irrigation Works in the district nor are there any tracts specially in need of their protection. Irrigation is chiefly from wells, as the tidal influence passes so far inland as to make the rivers useless for irrigation. No tanks are large enough to be used in watering fields except a few in the Malwan, Ratnagiri and Vengurla talukas.

DRINKING WATER

The supply of drinking water is generally adequate in the district.

COMMUNICATIONS

The main district road is an unbridged one. It runs north and south passing through the chief inland trade centres and crossing the rivers, above the limit of navigation. From this road branch off several smaller roads which connect it with the Sahyadri passes on the east and the seaports on the west. There are excellent bridged roads from Ratnagiri to Kolhapur, from Vengurla to Belgaum, and Kolhapur to Devgad. The district is also served by ferry boats and steamers but the service is partly interrupted during the monsoon and communication with the outside world is uncertain except by the Ratnagiri-Kolhapur Road which is bridged throughout.

ECONOMIC CONDITION

The district is remarkable for the density of its population and for the readiness with which the people leave their homes to work in Bombay and elsewhere. Their great numbers keep the bulk of the people very poor but the teeming population of Ratnagiri has been one of the chief factors in the development of the city of Bombay. Over a hundred thousand workers spend the fair season in Bombay and return at the beginning of the rains to till their fields. The labourers who go outside generally get higher wages than their humble living demands and the district is enriched by the large stores of money brought to it by the crowds of its natives who are spread over the Presidency and beyond.

INDUSTRIES

Agriculture is the chief industry of the district but in a few towns and villages *saris* and coarse blankets are made. The town of Ratnagiri is celebrated for the inlaid furniture of its School of Industry. Fishing and fish curing is also an important industry of the district. Aluminum trinkets at Vijaydurg and Malwan nibs are famous. The inhabitants supply a very large proportion of the "*Sarangs*" and "*Lascars*" on the sea-going steamers. Mangalore tiles of a superior quality are manufactured near Malwan. The ship-building industry of the district also deserves mention.

The *Khoti* tenure is the principal characteristic of the land administration. The *Khot* is a middleman responsible for the payment of the assessment fixed by the survey and entitled according to customary village rates to collect a grain rent from the cultivators, realising as profit all collections in excess of the Government dues.

In normal years the net area cropped amounts to nearly 180,000 acres though it fluctuates according to seasons. As already noted, the number of cattle and of sheep and goats has been considerably reduced owing to the famine of 1918-19, the number of the former falling from 236,697 in 1915-16 to 178,509 in 1919-20 and of the latter from 18,442 in 1915-16 to nearly its half (9,775) in 1919-20. It may be again noted here that these statistics only apply to one-fourth of the district. *Khoti* villages do not furnish agricultural statistics.

POPULATION

It will be seen from the census figures below* that the population has increased by thirteen per cent. in the last fifty years. The fact that this notoriously crowded district continues to show substantial decennial increases in its population, except in the last decennium (1911 to 1921) which shows some decrease evidently due to the terrible influenza epidemic of 1918-19, points to the importance of its connection with Bombay.

*Year	Population.
1872	1,019,136
1881	997,090
1891	1,105,926
1901	1,167,927
1911	1,203,638
1921	1,154,244

RELIGION AND LANGUAGE

Of the total population of 1,154,244, Hindus number 1,066,761, Musalmans 80,991, Christians 6,431, Parsis 36 and others 25. Marathi is the vernacular of the district and is spoken by about ninety-eight per cent. of the population. A large section of the Musalmans who number seven per cent. of the population of the district, does not appear to have returned Hindusthani as their mother-tongue. Generally indeed the Ratnagiri Musalmans use the local dialect of Marathi more frequently than they do Hindusthani.

BROAD OCCUPATIONS

Speaking broadly, 872,083 persons or 75·6 per cent. of the total population of the district are supported by Agriculture. Industry including mines affords the means of livelihood to 63,214 persons or 5·5 per cent. Trade and Transport support 76,399 souls or 6·6 per cent. of the population, the Professions and Liberal Arts 14,913 persons or 1·3 per cent. while all other occupations together support 127,635 persons or 11·1 per cent.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population based on the census of 1921, according to occupations and in a few cases according to castes. The figures include both workers and dependents.

Pasture and Agriculture.—Of the total population of 888,988 supported by pasture and agriculture, 776,545 are ordinary cultivators. 53,487 are farm servants and field labourers, 41,377 derive their income from rent of agricultural land and 14,990 are herdsmen, shepherds and goatherds. Many of these go to Bombay in the fair season and earn enough and to spare.

Cultivators, as already noted, number 776,545 or 67 per cent.; and comprise mostly Marathas, Kunbis, Bhandaris, Shindes and others. The Marathas claim Rajput descent and take more to service as soldiers, police constables and are better off. Kunbis more commonly called *Kulwadis* are steady cultivators but from their numbers and the poorness of the soil and from the small margin of profit left to them after the customary share of the produce has been paid to the *Khot*, they make a living with great difficulty. They add to their income, however, by seeking employment in Bombay where they work as carriers, garden and house servants and factory and mill-hands. Bhandaris are cultivators and palm-tappers. In former times they supplied the pirate chiefs with most of their fighting men and even now many Bhandaris are sailors. Shindes are found all over the district. As a class they are intelligent and well-to-do, living as cultivators and some entering Government service in which they have risen to high offices.

Fishing.—Fishing supports 29,075 persons. Though both uncured and cured fish find a ready market the condition of persons following this occupation, is not generally satisfactory as many of them are neither sober nor thrifty.

Industry.—Of the total population of 62,405 supported by industry, those engaged in textile industry such as weavers and other workers in cotton, wool, silk, etc., number 10,699. Carpenters 11,736 and basket-makers 1,262 chiefly constitute the wood industry. In the metal industry, workers in iron number 1,366 and those in brass and copper 917. Workers in gold and silver number 9,043. The potters number 2,539, and bricklayers and masons 1,090. In the food industry, manufacturers of vegetable oil 3,137, and toddy drawers 1,907 deserve a mention. Tailors 1,663, shoemakers 4,327, washermen 1,028 and barbers 4,974 are the others falling under this head (Industry). As all of these get ample employment and decent wages either in the district or in Bombay, the condition of almost all of them is fair.

Trade.—Grocers and sellers of oil, salt, condiments and spices 8,330, sellers of milk, butter, fish, poultry 11,026, grain and pulse dealers 3,537, dealers in hay, grass and fodder 242 and dealers in fuel such as firewood, cowdung cake, etc., 461 are some of the more important of the class. The trade in piece-goods and textiles supports 1,015 persons. Traders as a class are secure.

Professional Beggars.—These number 4,161. As many of them go begging for long distances, they get enough for their maintenance.

Depressed Classes.—Among these may be mentioned the Mahars and Dheds 84,547, the Chambhars 11,891, Bhangis 91 and Mangs 17. Except Bhangis, who are scavengers, and Chambhars who are shoe-makers, and as such get fair wages, the other classes are not well-off. Many of them however go to Bombay and find ample employment there and their condition is not hence as hard as it would otherwise have been.

Brahmans (62,226).—They are mostly writers, Government servants, priests and many cultivate their own land. They are generally fairly off.

Musalmans (80,991).—They are more numerous in this district than in any of the other Konkan districts. They are mostly fishermen, sailors, constables, messengers and domestic servants, etc., and are fairly well-off.

Christians (6,431).—They are mostly Native Christians, descendants of converts to Christianity during the time of Portuguese rule. Most of them are husbandmen. Many are also engaged in pig and poultry breeding. They are fairly well-to-do.

Parsis only number 36.

LIABILITY TO FAMINE

The district is practically free from fear of drought. Since the beginning of British rule there has been no year of distress so severe and general as to amount to famine. In **1876** the rainfall was about half the average, the late rains failing entirely. Nearly the whole of the *harik*, most of the *nagli* and a large part of the rice crops were lost and prices were high. The seasons of **1896-97, 1899-1900** and **1901-02** were also unfavourable, but relief works were not necessary. The year **1918-19** was one of the worst known in the district. It was not however found necessary to start relief works, as the grant of gratuitous relief adequately met the situation.

FORECAST OF RELIEF WORKERS

Real famine is an unlikely event and it is not possible to forecast the relief that would be necessary. In **1876-77** Rs. 77,000 were spent on relief works but the distress was chiefly tided over by an unusual demand for labour in Bombay whither at least one and a half lakhs of persons moved for the fair season and returned with savings enough to last them till the next harvest.

In **1896-97** and **1899-1900** test works were opened but the people were unwilling to accept employment on famine wages.

The year **1918-19** was one of the worst known in the district. The opening of relief works was not however found necessary as the grant of gratuitous relief to the extent of about twenty thousand rupees was found to meet the situation adequately.

RATNAGIRI STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous columns on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Other.	Total.
		No.		No.		No.				Rs.	No.			Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ratnagiri	146	408	6	6	152	416	142,898	343	93,966	56	95,662	35·8	961	30,770	22,403	54,134	1,983	234	39,311	41,528
2	Malwan	65	270	5	23	70	302	154,345	511	38,743	58	169,246	87·8	6,449	54,314	52,857	113,620	953	795	54,378	56,126
3	Devgad	123	522	6	3	129	525	144,106	274	1,03,343	41	94,289	27·3	1,236	15,093	33,937	50,266	902	11	43,110	44,023
4	Kalspur	158	484	26	130	184	614	151,987	245	97,755	42	78,052	19·8	832	14,556	28,786	43,674	770	150	33,768	34,688
5	Sangameshwar	179	517	13	52	192	569	130,464	229	91,952	23	68,925	13·4	588	7,969	23,075	31,632	19	2,984	14,884	17,887
6	Chiplun	207	651	5	20	212	671	187,692	279	1,46,429	13	23,350	5·4	245	6,983	9,663	16,893	122	..	6,335	6,457
7	Khed	143	386	4	6	147	392	95,494	243	86,226	34	86,672	34·5	7	19,921	42,319	62,241	5	4,981	19,446	24,431
8	Dapoli	247	496	3	4	250	500	147,098	294	1,34,467	52	70,967	22·2	781	23,951	25,062	49,794	1,063	554	19,566	21,173
	Total ..	1,268	3,743	68	246	1,336	3,989	1,154,244	288	8,92,881	325	668,173	26·1	10,549	173,276	238,036	421,864	5,813	9,709	230,787	246,309

No.	Taluka.	Irrigation Abstract, 1922-23. Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ratnagiri	..	..	422	539	..	961	590	..	..	..	..	..	..	..	28	306	..	127	1,021	60	961
2	Malwan	..	..	688	770	2,834	2,147	6,449	2,228	..	..	..	..	..	..	872	256	2,136	..	917	6,449	6,449
3	Devgad	..	..	199	..	919	278	1,236	444	..	..	..	..	..	..	558	98	36	..	91	1,225	11	1,236
4	Kalspur	..	..	173	..	659	..	832	436	..	..	..	..	..	..	63	27	185	..	121	833	..	832
5	Sangameshwar	..	..	25	..	..	13	38	15	..	..	..	..	..	..	5	..	9	..	..	38	..	38
6	Chiplun	..	..	71	..	174	..	245	..	..	..	..	..	..	..	101	1	161	..	73	245	..	245
7	Khed	..	..	..	..	7	..	7	..	..	..	..	..	..	..	..	..	5	..	2	7	..	7
8	Dapoli	..	..	175	..	606	..	781	..	..	..	..	..	..	..	..	..	178	..	602	781	..	781
	Total ..	..	..	1,703	770	5,634	2,442	10,549	3,623	..	..	..	..	..	..	1,568	451	3,038	..	1,942	10,620	71	10,549

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous columns on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Other.	Total.
		No.		No.		No.				Rs.	No.			Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ratnagiri	146	408	6	6	152	416	149,867	360	93,854	56	95,661	35·9	1,655	27,786	24,727	54,218	1,916	234	39,293	41,443
2	Malwan	65	270	5	23	70	302	156,700	519	1,39,009	57	177,792	91·9	6,418	50,930	60,227	117,584	895	795	58,418	60,108
3	Devgad	123	533	6	3	129	536	148,497	283	1,03,307	41	94,965	27·5	1,044	15,081	34,130	50,255	943	11	43,157	44,111
4	Kalspur	158	490	26	130	184	620	155,227	250	97,779	41	77,842	19·6	936	13,187	29,527	43,500	564	150	33,628	34,342
5	Sangameshwar	179	517	13	52	192	569	134,937	237	91,945	23	68,924	13·4	587	7,503	23,480	31,040	14	2,954	14,086	17,054
6	Chiplun	207	651	5	20	212	671	197,135	294	1,46,003	13	23,351	5·4	325	5,869	10,672	16,866	120	..	6,365	6,485
7	Khed	143	386	4	6	147	392	101,529	259	86,037	34	86,706	34·9	7	16,200	46,006	62,213	5	4,981	19,477	24,463
8	Dapoli	247	496	3	4	250	500	159,746	319	1,34,097	53	70,959	22·2	647	22,881	26,295	49,823	1,145	554	19,437	21,136
	Total ..	1,268	3,760	68	246	1,336	4,006	1,203,638	302	8,92,022	328	675,501	26·3	11,079	159,478	254,972	425,529	5,604	9,709	234,659	249,972

No.	Taluka.	Irrigation Abstract, 1918-19. Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ratnagiri	..	..	851	803	1	1,655	840	..	..	..	..	..	211	15	413	..	319	1,698	43	1,655
2	Malwan	..	..	927	796	2,654	2,042	6,413	2,280	..	..	..	..	672	294	2,103	..	1,095	6,413	..	6,413
3	Devgad	..	..	328	..	857	129	1,044	328	..	..	..	..	422	101	107	..	96	1,054	10	1,044
4	Kalspur	..	..	131	..	805	..	936	502	..	..	..	..	238	15	87	..	94	936	..	936
5	Sangameshwar	..	..	28	..	3	16	47	14	Separate figures not avail-				..	..	12	..	21	47	..	47
6	Chiplun	..	..	17	..	285	3	325	1					19	..	258	..	45	325	..	325
7	Khed	..	..	..	..	12	..	12	..					..	..	..	..	..	12	..	12
8	Dapoli	..	..	164	..	483	..	647	..					..	..	182	..	461	647	..	647
	Total ..	..	..	2,191	796	5,897	2,195	11,079	3,965	..	..	..	..	1,579	430	3,168	..	1,991	11,133	54	11,079

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid	Math. Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetable.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesamum.	Linseed.	Groundnut.	Safflower-seed.	Niger-seed.	Cocoanut.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ratnagiri	..	..	9,558	..	4,563	6,491	18,612	..	..	192	204	267	764	172	..	375	550	..	61	611	108	29	474	..	6	..	600	678	1,757	..	..	97	97	10,872	32,846	1,116	31,730
2	Malwan	..	..	30,928	..	7,254	6,401	44,583	28	..	1,592	5,546	737	7,900	112	..	2,266	2,378	..	428	428	528	296	37	..	37	..	2,466	5,165	7,709	..	..	196	196	406	69,468	4,704	64,764
3	Devgad	..	..	7,845	..	3,304	1,667	13,016	..	2	369	1,313	392	1,983	12	..	20	32	..	47	47	100	81	195	..	..	..	400	463	1,058	..	2	1,466	1,468	606	18,391	2,062	16,329
4	Kalspur	..	..	6,908	..	2,419	2,539	11,866	488	..	260	42	748	1,098	42	..	50	92	..	93	93	209	27	185	..	..	..	400	171	756	..	..	511	511	2,118	16,548	1,440	15,108
5	Sangameshwar	..	..	3,116	..	2,563	2,121	7,800	42	5	41	..	31	124	439	..	2	441	..	6	6	6	6	18	..	..	..	160	1	179	..	..	..	..	..	8,567	560	8,007
6	Chiplun	..	..	2,908	..	2,959	1,801	7,668	21	11	20	..	20	72	946	..	821	1,031	..	58	58	15	15	127	..	..	..	121	268	516	..	..	22	22	..	8,236	1,006	7,230
7	Khed	..	..	7,933	..	6,269	5,301	17,503	571	4	124	..	5	193	323	..	10	333	..	61	61	31	8	8	..	..	..	227	287	235	..	..	10	10	1,988	20,353	425	19,928
8	Dapoli	..	..	7,298	..	4,359	4,553	16,210	1	3	65	..	5	74	187	..	329	514	..	482	482	8	1	452	..	10	..	600	282	1,349	..	..	12	12	6,005	25,323	591	24,732
	Total ..	..	..	76,514	..	32,790	27,074	136,378	193	25	2,672	7,107	2,873	12,870	2,205	..	3,122	5,327	..	1,239	1,239	872	441	1,496	..	51	..	4,853	6,887	13,287	..	2	2,315	2,317	21,995	194,726	10,898	183,828

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Ragi.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid	Math. Kulith.	Others.	Total.	Orchard and Garden Produce. Vegetable.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesamum.	Linseed.	Groundnut.	Safflower-seed.	Niger-seed.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Ratnagiri	..	..	9,314	..	4,227	4,236	17,772	14	..	233	311	269	827	Details	not available.		1,195	..	88	88	152	17	..	..	63	..	..	..	63	..	..	105	105	9,844	31,257	1,816	29,441
2	Malwan	..	..	29,260	..	7,019	6,401	42,680	20	..	1,592	4,292	737	6,646	Do.			7,513	..	586	586	632	305	200	..	74	..	..	..	274	..	..	141	141	595	61,527	4,170	57,357
3	Devgad	..	..	7,578	..	3,239	1,887	14,704	..	2	261	..	31	294	10	..	497	507	..	41	41	102	67	389	..	10	..	..	200	599	..	5	1,399	1,404	522	17,969	1,844	16,125
4	Kalspur	..	..	6,538	..	2,520	2,114	10,972	55	..	263	716	170	1,204	4	..	168	172	..	81	81	38	15	7	..	2	..	..	513	521	..	..	450	450	2,244	15,697	1,524	14,173
5	Sangameshwar	..	..	3,008	..	2,104	2,238	7,350	44	5	48	34	..	131	329	..	5	334	..	10	10	9	11	..	..	..	..	..	136	147	..	..	8	8	22	8,618	466	7,152
6	Chiplun	..	..	2,808	..	1,967	1,372	5,767	65	7	53	38	212	375	Details	not available.		1,190	..	43	43	7	8	..	..	..	..	..	87	95	..	..	11	11	..	7,452	1,229	6,192
7	Khed	..	..	7,147	..	5,329	3,387	15,863	662	7	153	1	..	223	De.			248	..	2	2	21	35	1	..	1	..	..	192	214	..	..	10	10	16,594	357	16,237
8	Dapoli	..	..	8,636	..	4,077	6,388	19,693	15	..	75	20	224	334	Do.			1,335	..	454	454	108	4	365	..	..	..	..	337	703	..	..	33	33	1,745	24,311	817	23,494
	Total ..	..	..	74,289	..	30,477	30,035	134,801	251	18	2,424	5,412	1,613	9,718	343	11,485	670	12,498	..	1,305	1,305	976	442	1,002	..	150	..	..	4,809	5,961	..	5	2,147	2,152	14,972	182,825	12,303	170,522

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen. No.	For Ploughs. He-buffaloes. No.	For Breedings. Bulls. No.	For Breedings. Bull-buffaloes. No.	For other purposes. Oxen. No.	For other purposes. He-buffaloes. No.	Milch-Cattle. Cows. No.	Milch-Cattle. She-buffaloes. No.	Young Stock. Calves. No.	Young Stock. Buffalo-calves. No.	Total. No.	Horses and Ponies. No.	Sheep. No.	Goats. No.	Ploughs. Small. No.	Ploughs. Large, &c., of over 2 cattle. No.	Carts. For passengers. No.	Carts. For produce and goods. No.	Cropped land per pair of plough cattle. Acs.
1	Ratnagiri	10,309	2,479	5	2	28	25	4,889	2,236	5,018	1,346	26,337	16	..	814	6,356	..	33	169	5·1
2	Vengurla																			
3	Malwan	21,824	4,378	9	9	665	46	6,829	4,710	6,998	3,448	48,916	18	..	2,353	13,155	..	79	731	4·9
4	Devgad	9,352	1,138	14	..	8	9	4,592	2,067	4,784	1,865	23,829	11	..	1,987	5,076	..	5	160	3·5
5	Rajapur	7,368	1,021	5	1	3	4	4,425	1,216	4,784	1,000	19,895	8	..	1,575	4,667	..	..	29	3·9
6	Sangameshwar	3,241	172	4	..	3	..	2,772	850	2,932	662	10,841	6	..	663	1,799	..	20	666	4·7
7	Chiplun	2,596	578	1	2	6	2	2,190	642	2,282	645	9,362	10	32	372	1,216	..	35	98	3·5
8	Khed	6,114	638	1	..	4	2	4,880	1,179	5,402	1,190	19,402	4	146	925	3,533	..	9	78	6·0
9	Dapoli	6,509	988	6	7	249	31	4,523	1,950	4,423	1,240	19,926	30	3	905	3,326	..	41	215	6·7
	Total ..	67,312	11,543	45	21	966	118	35,119	15,150	36,623	11,609	178,509	103	181	9,594	39,128	..	222	1,546	4·9

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen. No.	For Ploughs. He-buffaloes. No.	For Breedings. Bulls. No.	For Breedings. Bull-buffaloes. No.	For other purposes. Oxen. No.	For other purposes. He-buffaloes. No.	Milch-Cattle. Cows. No.	Milch-Cattle. She-buffaloes. No.	Young Stock. Calves. No.	Young Stock. Buffalo-calves. No.	Total. No.	Horses and Ponies. No.	Sheep. No.	Goats. No.	Ploughs. Small. No.	Ploughs. Large, &c., of over 2 cattle. No.	Carts. For passengers. No.	Carts. For produce and goods. No.	Cropped land per pair of plough cattle. Acs.
1	Ratnagiri	5,094	2,219	5,214	1,547	28,776	16	10	778	7,688	..	33	135	3·1
2	Vengurla	1,649	1,191	1,360	632	12,345	4	..	1,355	3,808	..	67	363	6·0
3	Malwan	5,042	3,278	5,332	2,525	40,230	18	..	4,691	12,099	..	10	594	4·0
4	Devgad	13,878	5,698	13,876	4,292	75,673	16	..	6,744	18,123	..	1	725	3·6
5	Rajapur	4,338	1,107	4,967	953	19,587	5	..	1,567	4,167	..	..	22	3·5
6	Sangameshwar	2,777	929	2,882	836	11,201	5	..	573	2,080	..	9	49	4·9
7	Chiplun	1,948	926	1,977	762	8,790	16	90	249	1,499	..	21	118	5·4
8	Khed	4,804	1,213	4,762	879	16,182	3	7	1,038	4,376	..	16	64	5·0
9	Dapoli	4,892	2,112	4,563	1,309	21,018	32	93	1,084	3,796	..	35	189	5·1
	Total ..	44,422	18,685	44,833	13,731	236,797	115	170	18,272	58,566	..	192	2,229	3·2

RATNAGIRI STATISTICAL TABLES—II.

Water-Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Ratnagiri ..	..	..	..	..	..	..	976	505	1,481	2,220	187	27	40	118	..	..	..
2	Vengurla ..	..	..	..	..	..	..	688	687	1,375	1,720	28	12	19	14	..	..	..
3	Malwan ..	..	..	..	3	..	..	1,999	1,290	3,289	2,807	497	75	46	12	..	..	..
4	Devgad ..	..	..	..	..	..	..	1,296	166	1,456	1,598	132	4	13	32	..	..	..
5	Rajapur ..	..	..	..	..	..	..	394	107	501	1,035	321	9	32	51	..	..	..
6	Sangameshwar (Devrukh.) ..	..	..	..	..	..	..	..	..	..	334	139	..	35	..	..	..	..
7	Chiplun ..	..	..	..	..	..	..	..	..	..	242	11	..	2	1	..	..	..
8	Guhagar P. ..	..	..	..	..	..	..	169	399	568	201	..	..	..	16	..	..	..
9	Khed ..	..	..	..	..	..	..	..	2	2	342	23	..	..	3	..	..	..
10	Dapoli ..	..	..	..	..	..	..	95	784	879	861	50	9	1	21	..	..	..
11	Mandangad P. ..	..	..	..	..	..	..	15	130	145	142	24	2	1	..	..	..	..
	Total ..	..	..	..	4	..	..	5,632	4,064	9,696	13,507	1,276	143	183	272	..	..	..

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
	There are no Government Protective Irrigation Works in this District.							

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 to acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of Holding.	Average. Assessment per holding.	Average. Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Ratnagiri ..	10,249	1,633	348	48	..	12,278	51,890	4·2	4 3 1	0 15 11
2	Malwan ..	16,808	4,086	937	92	5	21,928	108,226	4·9	5 14 4	1 3 11
3	Devgad ..	5,896	1,280	357	25	3	7,861	54,247	6·9	6 11 1	1 10 11
4	Rajapur ..	4,032	1,203	417	45	..	5,697	43,817	7·7	5 6 4	0 11 3
5	Sangameshwar ..	11,387	5,193	1,323	223	1	18,127	216,235	11·9	0 13 6	0 1 2
6	Chiplun ..	3,453	467	95	12	..	4,027	16,853	4·2	4 12 2	1 2 2
7	Khed ..	2,169	1,770	679	54	2	4,624	64,610	14·0	5 11 8	0 6 7
8	Dapoli ..	8,764	1,660	337	41	..	10,802	49,804	4·6	4 8 3	0 15 8
	Total ..	62,538	17,762	4,493	538	13	85,344	605,682	7·1	4 3 2	0 9 6

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per head of population including Alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Ratnagiri ..	50,470	51,491	1 0 4	72,954	0 11 4
2	Malwan ..	104,515	129,306	1 3 10	132,093	0 15 8
3	Devgad ..	53,991	57,005	1 0 11 0	54,279	0 10 11
4	Rajapur ..	42,245	30,754	0 11 8	40,572	0 12 2
5	Sangameshwar ..	213,853	15,328	0 1 2	19,722	0 12 5
6	Chiplun ..	16,720	19,178	1 2 4	26,494	0 11 7
7	Khed ..	64,529	26,533	0 6 7	29,810	0 14 3
8	Dapoli ..	48,919	48,762	0 15 11	51,522	0 15 2
	Total ..	595,322	3,58,327	0 9 8	427,416	0 13 5

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
	There are no Government Protective Irrigation Works in this District.							

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Ratnagiri ..	Maximum 1878	..	..	..	..	35·18	42·16	48·45	27·29	9·20	0·55	..	162·83
		Minimum 1905	..	..	..	0·04	11·87	21·21	7·48	8·31	1·05	1·29	..	56·19
		Average	0·09	0·05	0·04	0·07	19·45	32·29	18·45	11·65	3·52	0·92	0·08	96·69
		Rainfall for 1922-23	..	0·05	..	..	38·43	42·79	9·34	5·68	1·02	3·47	..	100·78
2	Vengurla ..	Maximum 1878	..	..	..	0·30	0·16	36·50	26·54	46·69	31·59	8·72	4·30	..	164·74
		Minimum 1876	..	..	0·61	0·16	..	20·67	24·77	7·01	5·65	..	..	..	58·87
		Average	0·08	0·04	0·02	0·26	2·49	32·39	24·20	16·51	9·91	2·10	1·15	0·24	103·19
		Rainfall for 1922-23	..	..	..	0·04	0·99	26·35	17·77	4·31	1·59	0·93	0·41	..	52·39
3	Malwan ..	Maximum 1878	..	..	..	0·11	37·11	43·08	36·53	28·00	7·16	3·82	..	..	155·81
		Minimum 1876	..	..	..	..	..	24·40	4·69	5·66	..	..	..	..	34·75
		Average	0·05	0·08	..	0·19	2·18	25·50	28·13	15·99	10·29	3·22	1·10	0·14	84·67
		Rainfall for 1922-23	..	..	0·10	..	1·38	24·83	34·18	9·41	3·77	1·85	9·31	..	83·83
4	Devgad ..	Maximum 1916	..	..	..	..	2·93	37·78	29·81	26·08	30·62	9·07	8·42	..	144·71
		Minimum 1899	..	..	..	0·36	2·06	20·69	1·87	7·25	8·55	0·17	..	..	41·33
		Average	0·10	0·02	..	0·11	2·50	25·98	25·87	15·21	11·11	3·72	0·10	0·48	84·61
		Rainfall for 1922-23	..	..	..	..	0·77	32·51	30·61	11·54	4·83	1·05	7·85	..	89·16
5	Rajapur ..	Maximum 1892	..	..	..	..	11·46	31·44	51·52	58·62	26·92	10·73	0·59	0·07	191·35
		Minimum 1876	..	..	..	..	..	..	45·08	15·01	5·59	0·18	..	..	65·86
		Average	0·10	0·02	0·01	0·14	1·69	34·23	49·81	27·12	13·60	3·22	0·12	0·29	130·39
		Rainfall for 1922-23	..	..	..	0·35	38·56	56·96	15·26	10·01	2·60	3·54	..	..	127·08
6	Devrukh (Sangameshwar) ..	Maximum 1878	..	..	..	..	29·63	48·72	70·03	41·64	12·56	2·56	..	..	205·14
		Minimum 1899	..	..	0·15	4·18	2·61	20·95	14·99	11·66	1·66	0·64	..	..	56·69
		Average	0·15	0·06	0·05	0·36	1·78	32·43	53·24	32·79	16·25	6·55	1·38	0·19	144·07
		Rainfall for 1922-23	..	..	1·11	0·39	..	38·01	62·17	18·54	11·32	5·05	8·03	..	142·62
7	Chiplun ..	Maximum 1878	..	..	..	..	33·84	46·31	66·93	31·69	8·92	1·70	..	..	189·39
		Minimum 1899	..	..	..	3·72	1·15	20·24	11·08	13·62	16·72	1·36	..	..	67·91
		Average	0·09	0·05	0·03	0·35	1·52	30·72	52·52	31·91	16·98	5·74	1·20	0·17	140·78
		Rainfall for 1922-23	..	0·04	2·90	..	0·30	38·82	63·81	18·49	13·43	5·60	4·50	..	145·89
8	Guhagar P. ..	Maximum 1878	..	..	..	..	35·24	33·62	41·25	35·13	10·53	0·90	..	..	156·67
		Minimum 1876	..	..	..	..	..	23·07	9·05	4·06	..	..	..	..	36·13
		Average	0·07	0·05	..	0·15	1·54	26·22	32·89	18·21	11·42	2·76	0·69	0·07	94·07
		Rainfall for 1922-23	..	0·03	..	..	..	37·06	47·26	6·65	6·78	1·25	1·62	..	100·70
9	Khed ..	Maximum 1890	..	..	..	0·77	45·25	75·98	39·17	18·12	1·31	4·35	2·76	..	186·40
		Minimum 1899	..	..	7·78	1·18	25·92	11·14	12·91	14·90	1·37	2·20	..	..	75·20
		Average	0·25	0·03	0·02	0·26	1·10	31·20	49·62	29·20	16·28	3·32	1·17	0·13	134·68
		Rainfall for 1922-23	..	..	0·35	..	..	36·42	57·90	11·92	7·75	2·24	1·07	..	117·65
10	Dapoli ..	Maximum 1916	..	..	..	0·98	52·09	43·24	48·77	26·92	7·45	2·48	..	..	181·93
		Minimum 1899	..	..	10·10	1·84	26·33	11·40	9·97	4·76	0·60	..	..	..	65·00
		Average	0·06	0·02	0·02	0·34	1·33	33·48	48·15	29·64	14·63	2·15	0·69	0·12	131·69
		Rainfall for 1922-23	..	..	0·02	..	..	43·34	65·16	15·83	10·80	0·77	1·32	..	136·49
11	Mandangad P. ..	Maximum 1878	0·04	..	..	0·12	..	28·22	66·66	76·84	32·54	6·90	1·60	..	212·92
		Minimum 1876	..	..	..	..	..	..	51·68	21·07	6·76	0·06	..	..	79·57
		Average	0·06	0·02	0·02	0·64	1·06	34·07	59·71	36·22	15·22	1·55	0·91	0·08	151·56
		Rainfall for 1922-23	..	0·24	..	..	..	40·28	79·88	18·73	13·50	0·71	2·47	..	155·81

Temperature Details (Ratnagiri).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913 ..	Mean maximum ..	88	84	85	88	91	86	84	84	84	88	91	86
	,, minimum ..	63	68	69	76	80	76	76	75	74	73	68	67
	Absolute maximum ..	94	87	88	91	92	95	87	85	87	96	96	95
	,, minimum ..	60	62	61	70	76	72	71	72	72	67	63	58
1914 ..	Mean maximum ..	89	85	85	87	91	86	83	82	83	92	92	89
	,, minimum ..	66	67	69	75	80	77	75	75	75	76	75	71
	Absolute maximum ..	94	88	89	91	94	91	87	85	85	98	98	95
	,, minimum ..	63	63	64	69	78	72	71	72	72	72	70	64
1915 ..	Mean maximum ..	87	84	86	89	90	87	84	84	83	85	91	88
	,, minimum ..	69	68	73	77	81	79	77	76	75	73	73	68
	Absolute maximum ..	94	91	93	94	92	92	88	86	88	95	95	93
	,, minimum ..	69	60	68	70	77	74	74	73	73	69	68	62
1916 ..	Mean maximum ..	86	82	87	88	89	84	83	82	82	85	87	87
	,, minimum ..	68	67	73	77	78	75	76	75	74	74	73	67
	Absolute maximum ..	93	89	90	92	91	86	88	85	88	92	91	92
	,, minimum ..	65	61	69	72	74	72	73	73	71	69	69	61
1917 ..	Mean maximum ..	87	85	87	87	88	84	83	82	82	83	88	87
	,, minimum ..	67	68	71	76	78	76	76	75	74	73	70	66
	Absolute maximum ..	95	96	98	92	91	90	86	85	85	91	92	91
	,, minimum ..	60	63	65	73	73	73	73	72	72	68	64	63
1918 ..	Mean maximum ..	88	86	87	87	87	85	85	83	84	89	92	88
	,, minimum ..	68	68	73	75	78	76	77	75	75	74	70	70
	Absolute maximum ..	94	94	92	90	93	87	87	85	86	97	99	96
	,, minimum ..	63	64	65	70	71	72	72	72	72	68	69	65
1919 ..	Mean maximum ..	86	83	84	87	90	85	83	83	84	88	89	89
	,, minimum ..	68	67	71	75	80	77	75	75	75	75	74	69
	Absolute maximum ..	94	86	88	93	92	93	85	84	86	96	96	95
	,, minimum ..	62	60	66	69	77	72	68	73	73	72	68	64
1920 ..	Mean maximum ..	90	88	87	89	90	87	83	83	84	89	93	89
	,, minimum ..	72	69	73	77	80	77	76	75	75	76	72	67
	Absolute maximum ..	97	101	98	97	90	91	86	85	87	97	98	96
	,, minimum ..	66	63	69	71	77	72	74	72	73	72	65	63
1921 ..	Mean maximum ..	87	88	88	89	90	86	83	82	83	91	89	87
	,, minimum ..	67	67	72	79	80	77	75	75	74	75	70	68
	Absolute maximum ..	93	100	104	91	92	91	87	85	85	95	96	93
	,, minimum ..	58	59	67	74	77	73	71	72	72	72	67	66
1922 ..	Mean maximum ..	87	88	88	89	90	85	82	82	83	91	89	87
	,, minimum ..	68	70	72	78	79	76	75	75	74	75	72	67
	Absolute maximum ..	94	95	102	92	92	92	84	84	84	97	96	93
	,, minimum ..	59	61	64	70	72	72	72	72	72	71	63	63

Prices—Pre-war—Normal.

No.	Taluka.	Price in lbs. per rupee. Rice.	Rāgi.	Sāva (Vari).	Kulith.	Rice Straw.	Dry Grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Ratnagiri ..	17	24	22	21	128	156	0 10 10	0 6 9	0 4 9
	Non-headquarter towns.									
2	Vengurla ..	16	25	..	25	128	193	0 8 3	0 6 1	0 4 3
3	Malwan ..	18	25	..	22	..	295	0 9 1	0 6 8	0 4 8
4	Devgad ..	12	..	..	..	156	236	0 8 0	0 5 9	0 3 4
5	Rajapur ..	18	25	25	27	320	307	0 9 2	0 6 3	0 3 6
6	Sangameshwar ..	16	25	25	19	366	116	0 8 8	0 5 0	0 2 11
7	Chiplun ..	16	24	26	19	207	201	0 10 0	0 6 4	0 3 5
8	Guhagar P. ..	17	24	23	24	128	246	0 7 3	0 5 5	0 3 6
9	Khed ..	17	26	28	19	145	213	0 8 10	0 6 4	0 3 5
10	Dapoli ..	16	24	29	12	128	128	0 9 1	0 4 10	0 3 11
11	Mandangad P. ..	16	29	33	..	269	427	0 6 0	0 4 0	0 3 0
	Average of the non-headquarter towns	17	25	28	21	216	236	0 8 3	0 5 2	0 3 8

Prices, 1922-23.

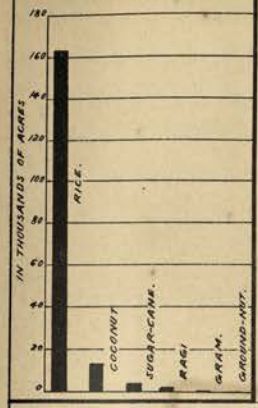
No.	Taluka.	Price in lbs. per rupee. Rice.	Rāgi.	Sāva (Vari).	Kulith.	Rice Straw.	Dry Grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Ratnagiri ..	12	16	..	11	51	81	1 4 0	0 11 10	0 9 10
	Non-headquarter towns.									
2	Vengurla ..	12	22	18	18	48	68	1 9 0	0 12 8	0 8 8
3	Malwan ..	17	18	..	..	..	60	1 8 0	0 12 0	0 8 0
4	Devgad ..	12	18	..	..	..	107	1 0 0	0 10 0	0 6 8
5	Rajapur ..	17	16	..	18	73	98	1 4 8	0 10 8	0 6 9
6	Sangameshwar ..	11	21	23	15	142	366	1 6 0	0 11 6	0 7 5
7	Chiplun ..	9	18	21	..	128	128	1 10 4	1 1 0	0 9 4
8	Guhagar P. ..	10	17	22	10	128	91	1 3 8	0 9 10	0 11 10
9	Khed ..	10	20	23	..	31	91	1 5 4	0 10 0	0 8 0
10	Dapoli ..	10	22	25	..	98	91	1 5 10	0 11 2	0 8 8
11	Mandangad P. ..	11	25	..	..	128	..	0 12 6	0 8 0	0 6 6

Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

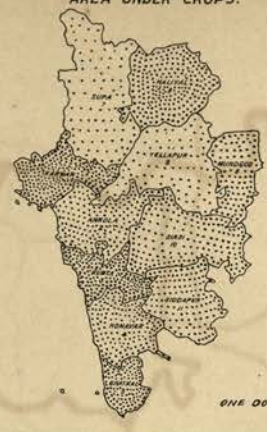
Month	1911-12. Relief workers.	1911-12. Dependents.	1911-12. Gratuitously relieved.	1911-12. Total daily average.	1911-12. Price in lbs. per rupee. Jowari.	1911-12. Price in lbs. per rupee. Bajri.	1918-19. Relief workers.	1918-19. Dependents.	1918-19. Gratuitously relieved.	1918-19. Total daily average.	1918-19. Price in lbs. per rupee. Jowari.	1918-19. Price in lbs. per rupee. Bajri.	1920-21. Relief workers.	1920-21. Dependents.	1920-21. Gratuitously relieved.	1920-21. Total daily average.	1920-21. Price in lbs. per rupee. Jowari.	1920-21. Price in lbs. per rupee. Bajri.
	No Famine Relief works were opened.																	

KANARA DISTRICT.

RELATIVE AREA OF PRINCIPAL CROPS.

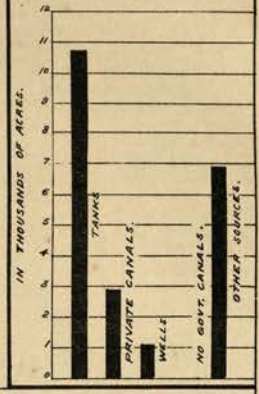


AREA UNDER CROPS.



RICE. ONE DOT = 100 ACRES.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.

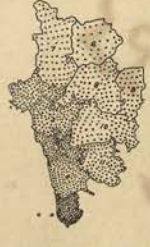


RAGI. ONE DOT = 10 ACRES.

SUGAR-CANE. ONE DOT = 10 ACRES.

GRAM. ONE DOT = 10 ACRES.

RAINFALL.



KHARIF-SEASON ONE DOT = 1 INCH.

RABI-SEASON ONE DOT = 1 INCH.

HOT-WEATHER ONE DOT = 1 INCH.

NUMBER OF CATTLE.

1909-10

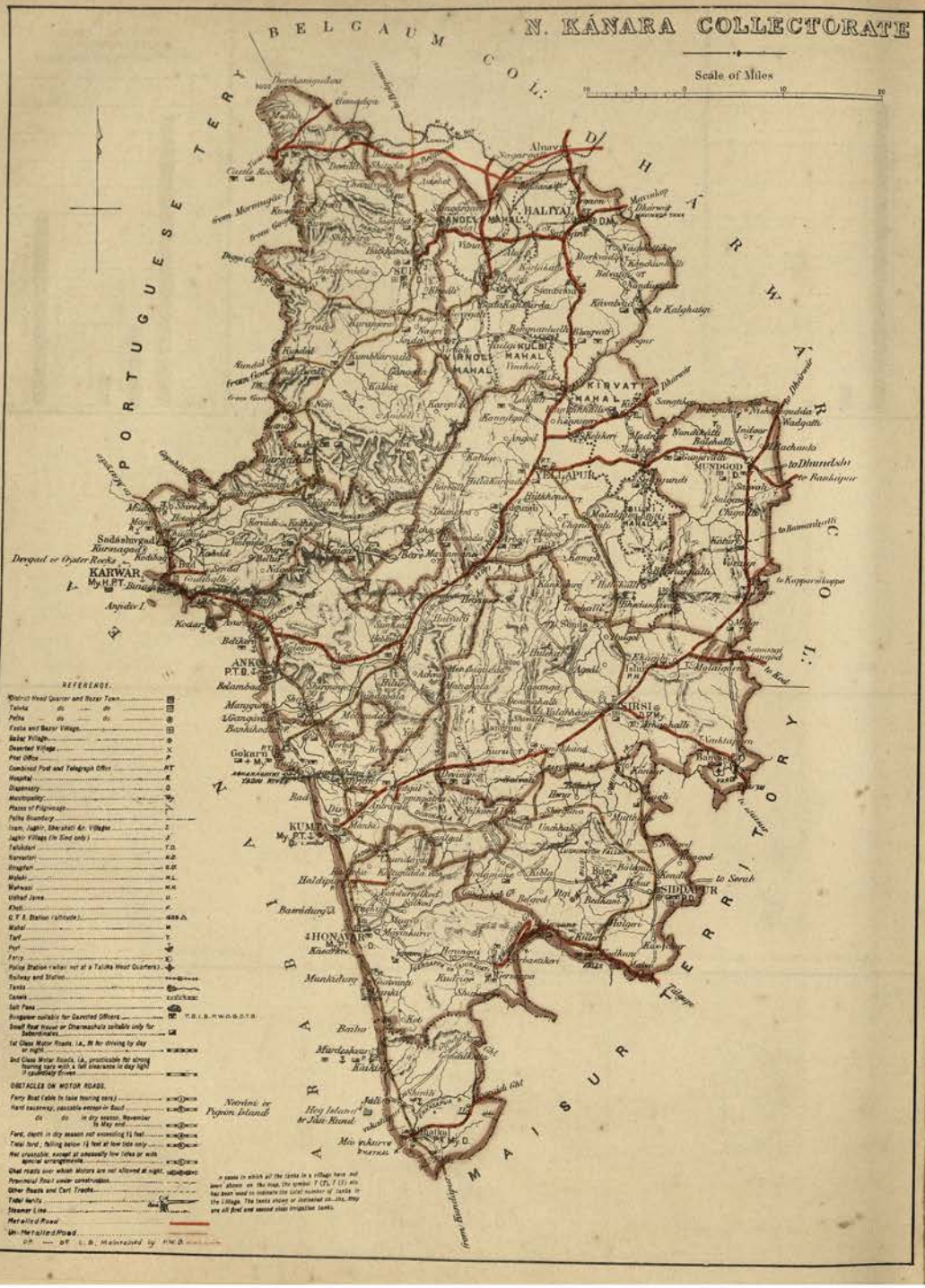
ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.


N. KÁNARA COLLECTORATE
Scale of Miles
BELGAUM COL.
DHÁRWÁR COL.
PORTUGUESE TERRITORY
MAISUR TERRITORY
ARABIAN SEA
HALIYAL
DANDELI MAHAL
KIRVATI MAHAL
YELLAPUR
MUNDGOD
KARWAR
ANKOLA
SIRSI
KUMTA
HONAVAR
SIDDAPUR
Sadáshivgad
Devgad or Oyster Rocks
Gokarn
Hog Island or Jáu Rund
Netrání or Pigeon Island
REFERENCE.
District Head Quarter and Bazar Town
Taluka do do
Petha do do
Tanks
Canals
Salt Pans
Ringgaon suitable for Gazetted Officers
Small Rest House or Dharmashala suitable only for Subordinates
1st Class Motor Roads, i.e., 24 for driving by day or night
2nd Class Motor Roads, i.e., practicable for strong touring cars with a full clearance in day light if equitably driven
OBSTACLES ON MOTOR ROADS.
Ferry Boat (able to take touring cars)
Hard causeway, passable except in Gaud
do do in dry season, November to May end
Ford, depth in dry season not exceeding 1½ feet
Tidal ford; falling below 1½ feet at low tide only
Wet crossable, except at unusually low tides or with special arrangements
Ghat roads over which Motors are not allowed at night
Provincial Road under construction
Other Roads and Cart Tracks
Tidal Bands
Steamer Line
Metalled Road
Un-Metalled Road
OP — OT L.B. Maintained by P.W.D.

KANARA

POSITION AND AREA

The district of Kanara lies between 13° 53′ and 15° 32′ North latitude and 74° 4′ and 75° 5′ East longitude and has an area of 3,945 square miles. It is bounded on the north by the Belgaum district; on the east by the Dharwar district and the State of Mysore; on the south by South Kanara in Madras; on the west, for about seventy-five miles, by the Arabian Sea; and on the north-west by the Territory of Goa. North Kanara is the most southerly of the coastal districts of the Bombay Presidency.

PHYSICAL FEATURES

The district consists of two widely differing tracts, one above and one below Ghats. The below-Ghat portion is a fairly level plain along the coast from five to ten miles in breadth, and mainly consisting of rice fields and cocoanut gardens. As it approaches the Ghats it breaks up into small thickly wooded hills and valleys. The Ghats are covered with dense forest. To the east of the Sahyadri crest, stretches a wooded upland from 1,500 to 2,000 feet above the sea. Near the Ghats this upland in the north is mostly forest, dotted with a few rice fields, but in the south there are large and beautiful spice gardens. Towards the east, the forest dwindles and there is more cultivation, but in the remainder of the above-Ghat tract, except on the bank of streams and in the more open glades, the whole is one broad waste of wood-land and forest. The open spaces are dotted over with hamlets or parcelled out into rice clearings.

Stretching across the water-shed of the Western Ghats, North Kanara contains two sets of rivers—one flowing west to the Arabian Sea, the other east towards the Bay of Bengal. Of the eastern streams, the Varada, a tributary of the Tungbhadra, alone calls for mention. Of those that flow westwards, four are of some importance—the Kalinadi in the north, the Gangavali and the Aghanashani in the centre, and the Sharavati in the south. The last of these, plunging over a cliff 825 feet in height, about thirty-five miles east of Honavar, forms the famous Gersoppa Falls. Along the coast, the quality of water is good, and the supply throughout the year abundant.

CLIMATE

The climate of different parts of the district varies greatly in salubrity. The coast portion though moist is healthy; but the forest tracts, especially the upland forests, are always malarious and at intervals are visited by especially fatal outbreaks. The most unhealthy time in the forests is the first two months of the rains and the four cold season months. The valleys of the Kalinadi and of its feeders are tracts where fever has a specially bad name. In December, January and February the uplands at night and early morning are often wrapped in mist. From the middle of April, the south-west wind freshens and blows all day, and throughout the hot season the greater portion of the district is rendered agreeable by the prevalence of cool breezes. The temperature falls to 59° F. in November and rises to 91° F. in May. Above the Ghats in March and April severe thunderstorms serve to cool the atmosphere.

RAINFALL

The rainfall is certain and plentiful. In June the regular monsoon commences with heavy falls followed at intervals by breaks and continues till October. Of the two divisions of the district the lowland tract records the heavier rainfall. On the coast, the rainfall is the heaviest in the south, ranging from 156 inches at Bhatkal to 118 at Karwar. In the upland parts, the rainfall varies with the distance from the Sahyadris. The heaviest rainfall occurs on the crest of the Ghats, where it reaches 300 inches. Near their crest it is over a hundred inches but in the east at Haliyal and Mundgod, it averages only forty-six inches.

SOILS

Below the Sahyadris the arable land consists partly of sandy plains along the sea shore and the banks of rivers and partly of narrow valleys among the hills, most of them watered by unfailing streams. The sandy soil (*Malalu* or *usutri*) is generally poor and much broken by salt water creeks. The soil in the upper slopes of the valleys is a hard earth made of crumbled iron-clay or laterite, which, if not constantly worked, stiffens into clods and stifles growth. At the upper ends of the valleys a red alluvial soil (*kagdali*) with shining particles of mica is often found. Further down the valley, a black loose salt marshy earth (*gajini*) occurs; and near the mouth of the valley is a still richer soil called *bailu*. Along the coast and on some of the creeks is a valuable sandy or alluvial soil known as *pulan* or *shitta*. It is often covered with drift sand but when the sand is cleared the loam yields excellent rice, the richest cocoa palms and fine cashew nuts and *undi* trees. Above the Sahyadris, except where the underlying iron-clay rises to the surface, the soil is good. The best called *kagdali* is a red mould containing very small stones. In some places the soil is a stiff, moisture holding, clay.

CROPS

Rice is by far the most important crop, occupying from one and a half to two lakhs of acres or roughly seventy-five per cent. of the net cropped area. The only other cultivation of importance is that of orchard and garden produce, condiments and spices and sugarcane. Inclusive of the area under cocoanut trees, these crops altogether occupy nearly fifty thousand acres. The area under cocoanut was slightly over twelve thousand acres in 1922-23 and nearly half of this under other fruit trees during the same year. Among spices, betel-nut (*supari*) is the most largely grown spice and in 1914-15 (which is the latest year for which details of different crops coming under the class are available) occupied about eighteen thousand acres. Of this Siddapur and Sirsi alone contained two-thirds of the total area under the crop. During the same year, black-pepper occupied about four thousand acres. The cultivation of black-pepper is mostly confined to the Siddapur and Sirsi talukas. Cardamoms, which in 1914-15 had an area of 1,400 acres under them, are almost exclusively grown in the Siddapur, Sirsi and Yellapur talukas. Betel leaves and chillies occupied respectively 350 and 450 acres in the year 1914-15. Sugarcane, which in 1922-23 covered an area of three and a half thousand of acres, is grown in all the talukas but the cultivation is important in the Honavar, Sirsi and Siddapur talukas.

FORESTS

The area in charge of the Forest Department is 3,118 square miles. Out of the total area, 1,297 square miles have been organised and are worked under different systems suited to the forests. Timber from high forests is worked departmentally and stacked in depôts in convenient centres and sold annually by auction. Fuel is exported from *coupes* sold-standing. For local supply of firewood, fuel depôts have been established by Government in towns and large villages where fuel is sold at a very low rate. Permits are also issued at nominal rates for cutting and removal of timber, fuel, bamboos and other forest products to inhabitants of the district. A large area is assigned for the exercise of privileges specially sanctioned by Government under the Kanara Forest Privilege Rules. These forests supply small timber, hutting materials, fuel, green leaves (*soppu*) used as manure and other forest products which the agriculturists are allowed to remove free. In the spice growing tracts above-Ghats, large areas of forest, at the rate of nine acres of forest for one acre of spice garden, have been assigned to the gardeners for the provision of green leaf manure. In the coast talukas, the area of forest classed as minor and devoted to the supply of the wants of the cultivators has recently been greatly increased and a new Minor Forest Division, measuring 156,000 acres, has been created and placed under the control of the Collector. About five thousand acres are given out for dry crop cultivation (*kumri*) to the hill tribes in Supa and Bhatkal Petas; about 1,500 souls mainly depend upon this area. The remaining forests are along the Western Ghats and are of great climatic importance. The supply of grass is sufficient for the requirements of the district, though it is of poor quality in many places. Five hundred tons of grass were, however, exported in the famine of 1918-19 and supplied to the Military Farm in Belgaum and to the Collector of Bijapur. An area of twenty-four thousand acres is covered with a very useful species of palm known as the *Tali* palm. This provides annually about fifteen hundred mature palms giving about three hundred tons of edible sago flour, giving means of subsistence to nearly six thousand poor people. During the famine of 1918-19 about three thousand palms were overcut by the poor people living in the vicinity of these forests, when they had to depend upon this food alone.

CATTLE

The total number of cattle as ascertained at the cattle censuses of 1915-16 and 1919-20 was about 280,000. Of this nearly eighty thousand were oxen for ploughs, about ninety thousand milch-cattle and roughly as many of the young stock. Sheep and goats numbered about four thousand. The cattle are inferior everywhere especially below the Ghats. Karwar, Ankola, Kumpta and Honavar contain few domestic animals of local breed. In Karwar, Kumta and Honavar, Goanese and other Christians rear pigs.

IRRIGATION

There are no large irrigation works in the district, nor are there any tracts specially in need of their protection. The Mavinkop tank situated on the western border of the Dharwar district irrigates a few hundred acres in three villages of the Haliyal taluka. Small tanks are mostly found in Kumpta, Honavar, Haliyal, Yellapur and Sirsi talukas. Irrigation wells numbered about seventeen thousand and are practically confined to the coast talukas and the supply of **DRINKING WATER** on the coast is hence abundant. In the jungle villages, inland below the *Ghats*, there were very few wells. Recently, however, with the help of Government grants, new wells are being sunk. In Haliyal and Mundgod, the supply is poor.

INDUSTRIES

Apart from the exploitation of the Forests the main industry in the district is fishing, especially combined with the trade of fish-curing. There are fourteen fish-curing yards on the coast and a very large quantity—over a lakh of maunds—of dried fish is exported to other ports of India and to Ceylon and the African coast. The trade is in the hands of the Mopla merchants. A fruit pulp canning industry is in operation at Ankola but its business is not yet extensive. In Kumpta and Banavasi (in Sirsi taluka) there are skilled carvers of sandal-wood. A few hundred persons are employed in catechu boiling. With these exceptions North Kanara has no industry worthy of notice.

TRADE

The export of *Supari* (betel nut) and other spices and of timber are the only trades of other than local importance. The principal trade centres are Honavar (population 6,837), Kumpta (population 10,650) and Sirsi (population 6,268). There are no big industrial towns in the district.

COMMUNICATIONS

The Madras and Southern Maratha Railway crosses the north-west corner of the district but usually is of little use to the district as the population in the north-west is very sparse. A branch line connecting the Timber Depôt of Dandeli with the Alnawar station on the Madras and Southern Maratha Railway was opened in 1919. Three principal and three minor roads cross the Sahyadris and two main roads traverse the district from north to south, one above and one below Ghats. The Mysore Darbar has recently constructed a new road as far as the border at Hadwalli, whence a road recently constructed by the Public Works Department runs as far as Bhatkal and gives access to the district from Mysore direct. There is steamer communication with Bombay which is closed for the monsoon from May to September. Karwar has a natural harbour and is the safest of all the Kanara ports. The other principal ports are Kumpta, Tadri, Honavar and Bhatkal. It will thus be seen that if occasion arises, the Madras and Southern Maratha Railway could be used for sending supplies to the Haliyal taluka and Mundgod peta as the line is within easy reach of both. Famine has never been known in the sea-side portion of the district, but in any case the sea, the creeks and the roads would give ample protection against high prices. It should, however, be noted here, that the coast tract, as already mentioned above, is cut off from communication by sea from the end of May till the beginning of September. Kanara depends to a considerable extent on rice imported from outside (Rangoon rice) and during the scarcity of 1919 a very considerable inflation of prices was only prevented by the importation before the month of May, of considerable quantities of rice.

ECONOMIC CONDITION

The population of the district* which increased steadily between the years 1872 and 1901 has fallen steadily since the latter date. The decline in the last decade has been trifling in the coast talukas, but in the above-*ghat* talukas it amounts to about 14 per cent. and in the Mundgod peta to 30 per cent. The figures of the last decade have, of course, been very seriously affected by the devastating influenza epidemic of 1918-19. Other causes are the constant prevalence of malaria above-*ghats* and the increasing dislike of the land-holding classes for life in jungle tracts. Popular opinion ascribes the decline to forest restrictions, the spread of forest and the ravages of wild animals, chiefly pig. It remains to be seen whether the revision of the Forest Settlement just completed will affect the position.

*Year.	Population.
1872	398,498
1881	421,932
1891	446,453
1901	454,490
1911	430,548
1921	401,727

In the coastal tract, the population is dense, *e.g.*, in Kumpta taluka it is 285 per square mile and this in spite of the existence of large areas of forest and waste land in the interior of the taluka. A very high percentage of the land is in the hands of non-cultivating owners, who do nothing or little for their lands which are let to tenants. Hitherto the tenant cultivators have shown little desire for independence; but there are some indications that they are becoming dissatisfied with their position. An exception to the general dependence of the cultivating classes on their landlords is furnished by the Nadors, who number 6,400.

Above-*ghats* the condition of the *Havik* spice gardeners is deteriorating. This is the result partly of the immense increase in the cost of labour, which has to be imported from below the *ghats* and partly to the increasing disinclination shown by the *Haviks* to work in their own gardens.

In the rest of the above-*ghat* tract the landlords complain of the increasing difficulty of obtaining tenants and except in the east of Siddapur, agriculture nearly everywhere shows a decline. In the Mundgod peta the land is nearly all held by peasant proprietors, who suffered terribly from the influenza epidemic and who have to wage a constant war against the depredations of pigs. If the attempts now being made in this tract to undertake communal fencing on a large scale meet with success, the peta will again become prosperous.

The forests are capable of providing continuous work for large numbers of labourers but in the above-*ghat* talukas there is no surplus population and the below-*ghat* people can, only with the greatest difficulty, be induced to work in the forests, even below the *ghats*, on account of the prevalence of malaria and the discomfort of working in the jungles. There are on the coast large numbers of people supporting themselves by casual labour in the fields whose standard of living is miserably low, and who yet cannot be induced to undertake forest work. Labour in the forests is largely imported from Goa. The labour difficulty is a constant hindrance to the proper development of the forest estate.

The fishing population numbers about twelve thousand. Their methods are primitive, but they earn enough to keep themselves in a fair standard of comfort, tempered by occasional periods of distress.

MIGRATION

In years of scarcity ample work in the forests will be available for the needy and the question of migration is not likely to be a serious one in the district.

POPULATION

As already noted above, the population of the district according to the census of 1921 is 401,727. The density per square mile comes to 101·8. Of this population 358,078 are Hindus, 26,402 are Musalmans, 16,119 are Christians, while all other classes together amount to 1,128.

LANGUAGES

The official language of the district is Kanarese, but in the coast talukas Konkani is the mother-tongue of many castes. In Supa peta Marathi is spoken.

BROAD OCCUPATIONS

Speaking broadly, 265,838 persons or 66·2 per cent. of the population are supported by Agriculture. Industry (including mines) affords the means of livelihood to 40,232 persons or 10·0 per cent. Trade and Transport support 42,880 persons or 10·7 per cent., the Professions and Liberal Arts 8,700 persons or 2·2 per cent., while the remainder 44,077 persons or 10·9 per cent. have to follow various occupations for their livelihood.

DETAILED OCCUPATIONS

The following is a detailed analysis of the population of the district based on the census of 1921, mainly according to occupations but in a few cases according to castes. The figures include both workers and their dependents.

Pasture and Agriculture.—Of the total population of 272,305 supported by pasture and agriculture, ordinary cultivators number 188,131, farm servants and field labourers 51,849 while 23,724 persons are dependent on income from rent of agricultural land. Of persons engaged in the raising of farm stock the most numerous are herdsmen, shepherds and goat herds, numbering 3,644. The economic condition of persons engaged in pasture and agriculture is detailed separately under that head above.

Fishing which supports 12,115 persons is a flourishing industry as both fresh and dried fish find a ready market within and without the district. The condition of the fishing classes is hence fair.

Industry.—The wood industry which supports 5,710 persons is mainly composed of carpenters, joiners, etc. 3,386, and basket-makers, workers in bamboos, etc. 1,454. In the metal industry, workers in iron number 1,538 while those in brass, copper, etc., number 781. Potters number 1,642. The textile industry including weavers and other workers in cotton, wool, silk, etc., etc., at home and in factories is a comparatively minor industry in the district and affords the means of livelihood to only 1,559 persons. In the food industry supporting 7,535 persons the most important are rice-pounders and flour-grinders 6,263; grain parchers number 404 while manufacturers of vegetable oils amount to 1,439. The building industry supporting 3,056 persons is chiefly made up of stone-cutters and dressers 1,385, bricklayers and masons 714 and excavators,

earth-workers and well-sinkers 645. Under " miscellaneous " industries may be mentioned the barbers 1,664, washermen 1,301, tailors 1,215 and shoemakers 507. Generally, it may be remarked that as most of the classes engaged in industry get nowadays sufficient work on reasonable wages their condition is fairly satisfactory.

Trade.—The trade in food stuffs (excluding hotels) stands first in the list. It supports 20,559 persons including grocers and sellers of oil, salt, condiments and spices, etc. 10,270, sellers of milk, butter, fish, poultry 7,394, grain and pulse-dealers 1,550 and dealers in hay, grass and fodder 402. The trade in piece-goods and textiles supports 2,769 persons. The trade in fuel such as firewood, cow-dung cakes, etc., maintains 617 persons. Traders as a class are secure from famine.

Professional Beggars (1,798).—Owing to their migratory habits they are not likely to require relief.

Depressed Classes.—These include the Mahars and Dheds 5,621, who are village servants, cultivators, etc., and Chambhars 1,822 who are leather workers. In a very acute distress some of these may need State help.

Brahmans (63,898).—They are mostly priests, writers, Government servants, cultivators, traders, money-lenders, etc., and are quite secure.

Musalmans (26,402) and *Christians* (16,119) are, on the whole, fairly well off.

LIABILITY TO FAMINE

Bad seasons have been known in Kanara and apparently even famine a century ago, but the records point to the fact that the local scarcity was caused by an influx of immigrants from the Deccan and Ratnagiri, and increased by the depredations of robbers and the hindrance to supplies from without. These factors can no longer accentuate distress and the district may be practically considered out of the reach of famine. If scarcity should ever befall the district it will probably be mostly felt in the Haliyal taluka and the Mundgod Mahal, which border on the Dharwar district and have a much less rainfall than the rest of the Kanara district.

FORMER FAMINES

The records show that the years **1876, 1899** and **1918** were those of the greatest deficiency of rainfall. In **1876-77** relief works were opened but only on account of immigration from Dharwar, about ten thousand of the famine-stricken entering Kanara with their cattle. The people were given employment on works and the cattle were allowed to graze in the forest. In **1899-1900** some portions of the Haliyal taluka and the Mundgod peta suffered from scarcity, but a relief work which was opened failed to attract any persons willing to work on famine wages. In **1918-19** scarcity was felt in the same portion as in 1899-1900 but the distress was never so serious as to necessitate the opening of any relief work.

In some low lands near rivers heavy rainfall and a stormy sea inundating the land with salt water sometimes cause floods which greatly damage the crops.

FAMINE FORECAST

There is nothing on which to base a forecast of the probable number of workers in the unlikely event of famine.

KANARA STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

Irrigation Abstract, 1922-23.

Cultivated and Uncultivated Area, 1918-19.

Irrigation Abstract, 1918-19.

Crops, 1922-23.

Crops, 1918-19.

Agricultural Stock, 1919-20.

Agricultural Stock, 1915-16.

KANARA STATISTICAL TABLES—II.

Water-Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Karwar ..	..	..	..	167	..	6	1,306	1,003	2,309	3,313	127	473	132	142	114	5	7
2	Ankola ..	..	..	..	7	24	16	1,669	1,199	2,868	2,106	118	549	61	122	150	8	29
3	Kumpta ..	..	..	..	7	..	2	2,329	1,820	4,149	5,614	199	720	76	268	6	1	1
4	Honawar ..	..	..	..	4	..	..	2,948	1,067	4,015	4,942	312	798	192	195	24	7	6
5	Bhatkal P. ..	..	..	..	59	..	.. 5	1,204	771	1,975	3,909	202	261	40	56	36	5	24
6	Haliyal ..	..	..	..	..	..	..	21	6	27	606	179	803	27	71	20	5	117
7	Supa P. ..	..	..	..	67	12	..	82	..	82	341	11	241	55	7	628	46	81
8	Yellapur ..	..	..	..	..	..	..	403	15	998	1,276	129	333	179	168	..	..	1
9	Mundgod P. ..	..	..	..	27	..	..	61	1	62	255	104	451	20	68	4	4	42
10	Sirsi ..	..	..	..	98	..	..	369	21	390	4,227	422	998	96	502	13	55	34
11	Siddapur ..	..	..	..	2	..	..	250	33	283	2,788	322	285	190	332	2	18	5
	Total ..	..	..	..	378	39	29	10,722	5,936	16,658	29,377	1,988	6,104	1,048	1,931	997	156	347

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Mavinkop Tank ..	872	755	755	666	*661	..	*661
			* Area under consolidated assessment.					
	Total ..	872	755	755	666	*661	..	*661

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acs.	Acs.	Rs. a. p.	Rs. a. p.
1	Karwar ..	7,288	1,006	213	93	0	8,540	33,119	3·9	12 10 2	3 4 2
2	Ankola ..	3,364	953	143	19	1	4,280	23,710	5·5	19 10 10	3 10 2
3	Kumpta ..	3,704	1,065	207	26	4	5,006	30,360	8·1	24 9 9	4 0 3
4	Honawar ..	1,615	1,306	150	19	1	3,091	30,927	10·0	40 13 7	4 1 4
5	Bhatkal P. ..	2,598	628	102	26	1	3,353	20,865	6·2	22 5 0	3 6 5
6	Haliyal ..	1,076	1,501	259	61	2	2,899	45,559	15·4	24 6 6	1 8 9
7	Supa P. ..	709	123	8	..	..	1,066	18,628	17·2	15 10 7	1 0 6
8	Yellapur ..	769	813	151	19	2	1,754	20,943	11·9	36 3 8	3 0 7
9	Mundgod P. ..	519	802	118	17	0	1,456	29,964	20·5	57 11 11	2 12 11
10	Sirsi ..	1,739	1,325	457	56	2	3,579	49,598	13·9	41 8 6	3 0 0
11	Siddapur ..	2,894	1,005	224	61	1	4,185	35,970	8·6	33 5 10	3 1 5
	Total ..	26,192	11,111	2,147	345	14	39,809	330,643	8·3	25 0 2	3 0 2

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area including Alienated land in Government Villages. Population.	Incidence per head of population including alienations.
		Acs.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Karwar ..	31,632	1,07,785	3 6 6	58,862	1 13 3
2	Ankola ..	26,615	96,117	3 3 9	36,922	2 5 3
3	Kumpta ..	35,811	1,21,785	3 6 4	63,962	1 14 5
4	Honawar ..	30,249	1,25,795	4 2 6	59,652	2 1 8
5	Bhatkal P. ..	23,744	74,789	3 15 8	38,045	1 15 5
6	Haliyal ..	47,940	71,214	1 7 9	25,386	2 12 10
7	Supa P. ..	18,830	26,624	1 9 3	15,182	1 12 0
8	Yellapur ..	18,830	63,547	3 3 3	17,412	3 10 4
9	Mundgod P. ..	29,964	52,620	1 12 0	10,065	5 3 9
10	Sirsi ..	55,348	1,49,588	2 11 2	41,352	3 9 9
11	Siddapur ..	34,495	1,39,627	4 0 9	33,945	4 1 9
	Total ..	338,511	9,99,109	2 15 2	400,790	2 7 10

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Mavinkop Tank ..	872	755	755	617	*577	..	*577
			* Area under consolidated assessment.					
	Total ..	872	755	755	617	*577	..	*577

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Karwar ..	Maximum 1878 ..	..	..	..	0·48	42·04	35·84	61·48	39·75	5·48	6·26	..	193·33
		Minimum 1899 ..	..	..	..	3·63	7·88	8·63	4·07	7·35	2·63	0·11	..	72·33
		Average .. 4·99	0·05	0·05	..	0·49	3·60	36·81	38·35	20·44	11·13	5·49	1·70	0·20	118·31
		Rainfall for 1922-23 ..	..	..	..	0·10	0·18	35·86	48·78	13·23	9·66	2·16	2·58	..	107·35
2	Ankola ..	Maximum 1878 ..	..	..	..	0·65	40·67	40·98	64·59	40·16	7·18	5·96	..	200·19
		Minimum 1876 ..	..	..	..	..	..	34·69	14·56	7·81	..	..	..	77·06
		Average .. 4·44	0·05	0·08	..	0·44	3·22	36·71	42·93	21·41	11·75	5·45	1·99	0·14	129·17
		Rainfall for 1922-23 ..	..	..	..	0·33	0·34	38·54	51·01	21·58	12·18	1·09	1·27	..	126·34
3	Kumpta ..	Maximum 1907 ..	..	..	..	3·17	1·25	81·83	29·76	39·58	15·64	7·54	0·83	..	220·60
		Minimum 1899 ..	..	..	..	3·58	2·91	41·56	9·75	14·28	7·69	4·95	0·25	..	84·52
		Average .. 4·93	0·09	0·06	0·03	0·48	3·73	60·93	43·66	26·97	13·81	8·22	2·18	0·38	140·71
		Rainfall for 1922-23 ..	..	..	..	0·06	0·06	59·20	46·23	15·58	11·40	0·47	2·34	..	126·33
4	Honawar ..	Maximum 1892 ..	..	..	..	3·79	12·90	24·87	65·33	46·06	16·41	25·09	1·33	..	192·69
		Minimum 1920 ..	..	..	..	0·40	0·38	22·63	36·91	19·33	5·44	4·97	0·21	..	90·27
		Average .. 4·02	0·06	0·06	0·02	0·50	3·54	40·04	53·60	26·14	11·95	7·54	0·98	0·32	137·85
		Rainfall for 1922-23 ..	..	..	..	0·16	0·62	37·79	52·26	20·71	11·63	0·03	2·25	..	125·46
5	Bhatkal P. ..	Maxima 1892 ..	..	..	..	2·74	16·34	28·19	65·14	52·60	19·45	13·16	1·75	..	199·37
		Minima 1876 ..	..	..	..	..	..	..	59·46	19·39	7·26	..	..	..	86·11
		Average .. 4·22	0·22	0·03	0·07	0·80	4·56	41·63	47·57	29·75	13·36	7·33	2·38	0·31	148·61
		Rainfall for 1922-23 ..	..	..	..	1·09	3·82	36·52	57·02	21·13	14·14	1·20	4·46	..	137·56
6	Haliyal ..	Maximum 1914 ..	..	..	..	1·21	2·45	4·95	35·23	19·33	4·82	1·68	1·22	0·20	71·09
		Minimum 1905 ..	..	..	..	1·94	3·49	3·61	7·37	3·52	1·18	4·89	0·37	..	26·37
		Average .. 4·23	0·08	0·04	0·37	2·07	3·01	4·26	13·56	8·32	2·18	5·13	0·48	0·36	47·04
		Rainfall for 1922-23 ..	..	..	4·26	2·55	4·15	6·00	19·43	7·95	2·85	4·39	2·03	..	53·61
7	Supa P. ..	Maximum 1882 ..	..	..	..	2·14	3·75	38·32	86·87	10·19	8·85	2·07	1·11	..	153·85
		Minimum 1899 ..	..	..	..	1·34	2·49	21·79	11·16	6·18	2·10	4·23	..	..	50·79
		Average .. 4·04	0·06	0·04	0·26	1·79	2·19	17·34	36·34	19·27	6·42	4·91	1·02	0·27	90·54
		Rainfall for 1922-23 ..	..	..	1·87	0·61	2·33	16·08	48·13	17·41	5·93	3·31	0·75	..	96·42
8	Yellapur ..	Maximum 1882 ..	..	..	..	5·59	37·26	78·81	11·90	9·65	3·53	1·19	..	142·93
		Minimum 1899 ..	..	..	..	0·91	2·76	13·03	5·50	2·58	3·96	0·07	..	81·09
		Average .. 4·11	0·07	0·04	0·41	6·87	2·47	20·36	35·47	20·81	7·13	5·16	1·41	0·30	96·00
		Rainfall for 1922-23 ..	..	..	0·23	1·51	2·47	22·54	47·49	16·28	5·88	2·05	2·25	..	101·93
9	Mundgod P. ..	Maximum 1882 ..	..	..	..	2·58	13·05	28·67	6·69	9·89	3·36	0·23	..	64·47
		Minimum 1905 ..	..	..	..	1·55	3·00	3·67	2·85	4·82	1·22	5·42	0·42	..	26·07
		Average .. 4·01	0·10	0·04	0·34	1·58	2·63	7·74	12·49	7·85	4·57	4·99	1·65	0·38	44·46
		Rainfall for 1922-23 ..	..	..	1·96	0·50	2·45	5·09	16·45	7·86	2·94	2·09	5·10	..	44·84
10	Sirsi ..	Maximum 1896 ..	..	..	..	0·17	40·50	47·15	40·82	2·15	4·33	1·69	..	136·81
		Minimum 1899 ..	..	..	..	0·32	29·91	13·65	9·64	3·51	5·32	0·05	..	60·49
		Average .. 4·09	0·08	0·05	0·04	0·25	2·61	21·72	36·65	19·20	7·41	5·60	1·84	0·28	97·20
		Rainfall for 1922-23 ..	..	..	0·01	0·01	2·12	19·95	42·90	19·50	7·13	3·17	2·11	..	92·99
11	Siddapur ..	Maximum 1900 ..	..	..	..	1·27	1·29	41·69	64·09	41·36	6·36	2·37	0·34	..	158·77
		Minimum 1877 ..	..	..	..	0·53	0·79	23·53	14·98	18·91	5·90	6·27	..	0·03	70·94
		Average .. 4·13	0·07	0·08	0·12	1·02	2·69	31·72	42·74	29·22	8·06	6·16	2·18	0·39	110·50
		Rainfall for 1922-23 ..	..	..	2·98	0·00	2·59	21·23	44·94	17·66	8·39	1·18	2·23	..	101·26

Temperature Details (Karwar).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	87	85	85	88	90	84	82	83	82	85	88	87
	Mean minimum ..	62	67	69	77	79	74	73	73	73	73	68	67
	Absolute maximum ..	91	88	87	91	92	89	85	85	85	91	91	91
	Absolute minimum ..	59	64	65	70	72	71	71	71	71	69	61	61
1914	Mean maximum ..	87	85	84	87	90	85	82	81	83	88	88	86
	Mean minimum ..	64	67	69	74	81	76	74	74	74	75	69	69
	Absolute maximum ..	91	88	88	90	91	86	84	84	82	89	91	91
	Absolute minimum ..	60	62	65	69	77	72	72	71	70	68	63	59
1915	Mean maximum ..	86	84	86	89	90	81	84	83	83	84	87	87
	Mean minimum ..	67	65	72	79	80	74	76	73	74	74	72	65
	Absolute maximum ..	90	83	92	91	91	84	87	86	87	88	91	90
	Absolute minimum ..	62	61	65	73	74	73	73	73	68	67	67	58
1916	Mean maximum ..	86	84	87	89	89	83	83	83	82	83	84	87
	Mean minimum ..	66	66	73	77	78	75	75	75	74	74	71	64
	Absolute maximum ..	90	90	93	94	93	86	88	85	85	86	89	91
	Absolute minimum ..	61	62	70	73	75	73	72	73	71	71	66	59
1917	Mean maximum ..	87	85	88	89	90	84	83	82	82	82	86	87
	Mean minimum ..	65	67	69	76	77	75	75	75	74	72	70	64
	Absolute maximum ..	91	90	96	91	93	91	86	86	85	86	89	89
	Absolute minimum ..	60	61	64	72	75	71	72	72	72	64	63	61
1918	Mean maximum ..	88	87	89	89	89	85	83	84	88	89	88	88
	Mean minimum ..	66	66	72	75	76	76	76	75	75	74	72	66
	Absolute maximum ..	93	90	94	92	92	87	87	85	85	93	96	92
	Absolute minimum ..	59	61	66	69	72	73	71	73	71	66	64	61
1919	Mean maximum ..	86	86	87	89	91	85	83	83	84	86	87	87
	Mean minimum ..	67	67	70	73	76	80	76	75	75	75	73	68
	Absolute maximum ..	91	89	91	93	94	90	86	84	87	94	92	92
	Absolute minimum ..	61	62	64	73	75	73	72	73	73	70	69	62
1920	Mean maximum ..	88	88	89	90	91	86	82	82	84	87	89	88
	Mean minimum ..	68	67	72	76	80	77	75	74	75	72	74	64
	Absolute maximum ..	91	93	91	92	93	92	85	85	88	92	93	92
	Absolute minimum ..	63	64	67	71	75	74	73	72	72	72	61	61
1921	Mean maximum ..	89	86	89	91	92	86	82	82	83	87	88	88
	Mean minimum ..	66	67	74	78	81	77	74	73	73	73	68	65
	Absolute maximum ..	94	90	91	94	94	86	84	85	92	93	91	91
	Absolute minimum ..	61	61	66	72	78	74	73	72	67	64	61	61
1922	Mean maximum ..	88	89	89	91	91	85	82	82	83	86	86	85
	Mean minimum ..	63	62	73	78	80	76	75	75	74	73	71	64
	Absolute maximum ..	93	92	90	94	94	85	85	85	92	90	88	88
	Absolute minimum ..	63	63	66	70	73	73	72	72	71	68	60	57

Prices—Pre-war Normal.

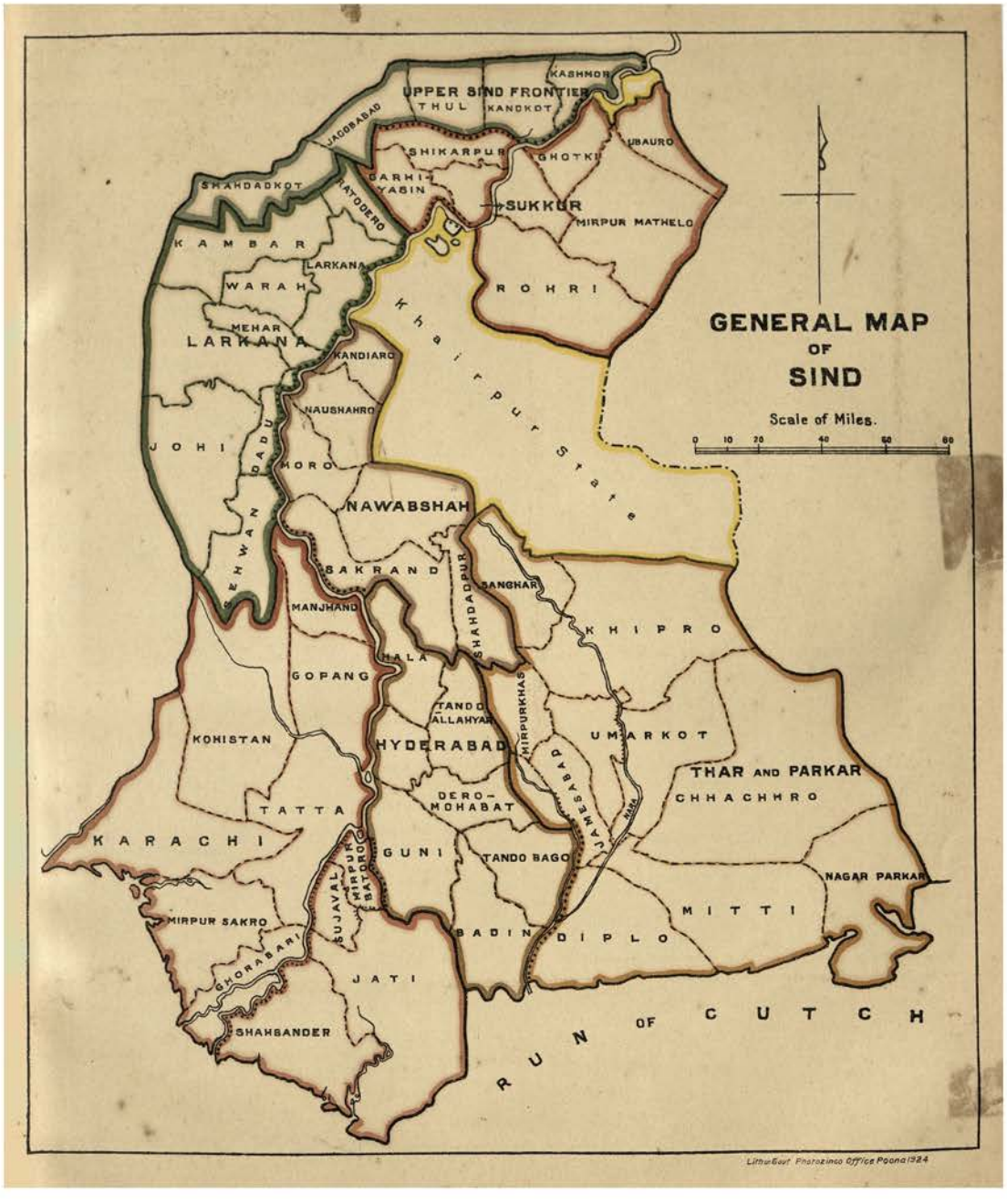
No.	Taluka.	Price in Lbs. per Rupee. Rice.	Ragi (Nachni).	Sava.	Math.	Rice-straw.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.					
1	Karwar ..	16	24	14	17	175	..	0 12 0	0 4 0	0 4 0
	Non-headquarter towns.									
2	Ankola ..	16	25	16	16	177	240	0 12 0	0 4 0	0 4 0
3	Kumpta ..	16	28	16	18	148	181	0 8 0	0 4 0	0 4 0
4	Honawar ..	16	24	15	18	189	116	0 8 0	0 4 0	0 4 0
5	Bhatkal P. ..	17	24	11	15	236	244	0 8 0	0 4 0	0 3 0
6	Haliyal ..	18	27	..	18	98	160	0 10 0	0 4 0	0 4 0
7	Supa P. ..	18	..	..	16	..	..	0 14 0	0 4 0	0 4 0
8	Yellapur ..	17	27	15	17	98	116	0 12 0	0 4 0	0 3 0
9	Mundgod P. ..	17	..	..	19	116	229	0 11 0	0 4 0	0 4 0
10	Sirsi ..	17	31	..	17	142	128	0 12 0	0 5 0	0 5 0
11	Siddapur ..	18	30	17	16	98	142	0 12 0	0 4 0	0 4 0
	Average of the non-headquarter towns..	17	27	15	17	145	173	0 11 7	0 4 5	0 4 3

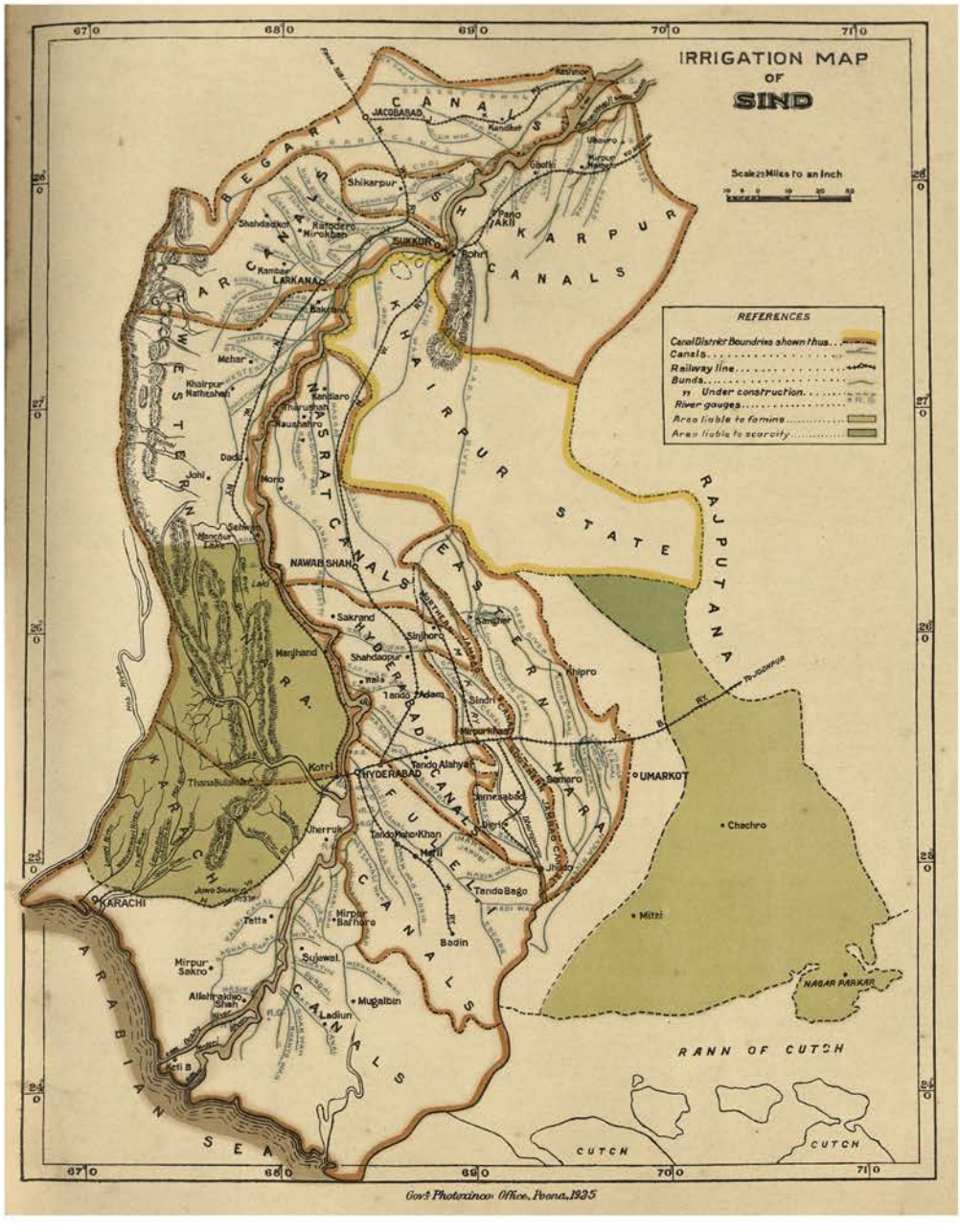
Prices, 1922-23.

No.	Taluka.	Prices in Lbs. per Rupee. Rice.	Ragi (Nachni).	Sava.	Math.	Rice-straw.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Karwar ..	11	17	..	9	55	..	1 0 0	0 8 0	0 8 0
	Non-headquarter towns.									
2	Ankola ..	11	19	10	10	64	98	1 0 0	0 6 0	0 8 0
3	Kumpta ..	12	19	11	12	66	41	1 0 0	0 8 0	0 6 0
4	Honawar ..	12	19	9	12	101	126	1 0 0	0 8 0	0 8 0
5	Bhatkal P. ..	11	17	..	11	80	160	1 0 0	0 8 0	0 8 0
6	Haliyal ..	13	24	..	10	28	64	1 4 0	0 12 0	0 8 0
7	Supa P. ..	14	..	..	10	..	..	1 4 0	0 8 0	0 8 0
8	Yellapur ..	11	15	..	9	77	77	0 12 0	0 8 0	0 8 0
9	Mundgod P. ..	11	..	..	9	77	59	0 13 0	0 7 0	0 8 0
10	Sirsi ..	12	22	11	10	91	80	1 0 0	0 12 0	0 12 0
11	Siddapur ..	12	24	..	9	65	81	1 0 0	0 8 0	0 8 0
	Average for the non-headquarter towns..	12	19	10	10	82	88	1 1 4	0 8 6	0 8 4

Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

Month.	1911-12. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in Lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in Lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in Lbs. per Rupee. Jowari.	Bajri.
	No. Relief Works were started in this District.						No Relief Works were started in this District.						No Relief Works were started in this District.					
Average for the period ..																		


GENERAL MAP
OF
SIND
Scale of Miles.
0 10 20 40 50 60
UPPER SIND FRONTIER
KASHMOR
THUL
KANDKOT
JACOBABAD
SHIKARPUR
GHOTKI
UBAURO
SHAHDADKOT
GARHI YASIN
LATOODERO
SUKKUR
MIRPUR MATHELO
KAMBAR
LARKANA
WARAH
ROHRI
MEHAR
LARKANA
KHAIRPUR STATE
KANDIARO
NAUSHAHRO
JOHI
DADU
MORO
NAWABSHAH
SEWAN
SAKRAND
SANGHAR
SHAHDADPUR
MANJHAND
KHIPRO
HALA
GOPANG
TANDO ALLAHYAR
MIRPURKHAS
KOHISTAN
HYDERABAD
UMARKOT
THAR AND PARKAR
DERO-MOHABAT
CHHACHHRO
TATTA
KARACHI
GUNI
TANDO BAGO
JAMESABAD
NAGAR PARKAR
SUJAWAL
MIRPUR BATORO
MITTI
MIRPUR SAKRO
BADIN
DIPLO
GHORABARI
JATI
SHAHBANDER
RUN OF CUTCH
Litho Govt Photozinco Office Poona 1924


IRRIGATION MAP
OF
SIND
Scale 25 Miles to an Inch
REFERENCES
Canal District Boundries shown thus...
Canals...
Railway line...
Bunds...
Under construction...
River gauges...
Area liable to famine...
Area liable to scarcity...
JACOBABAD
SHIKARPUR
SUKKUR
LARKANA
NAWAB SHAH
HYDERABAD
KARACHI
UMARKOT
MIRPUR KHAS
THARPARKAR
NAGAR PARKAR
RANN OF CUTCH
CUTCH
ARABIAN SEA
RAJPUTANA
KHAIRPUR STATE
EASTERN NARA
WESTERN NARA
KHARCHI
Govt Photozincco Office, Poona, 1925

SIND

POSITION AND AREA

The province of Sind forms the extreme north-western portion of the Bombay Presidency, consisting of the lower valley and delta of the Indus and lying between 23° 35′ and 28° 29′ north latitude and 66° 40′ and 71° 10′ east longitude. It has an area of 52,994 square miles and a population of 3,472,529 persons, inclusive of the Indian State of Khairpur which encloses an area of 6,050 square miles and a population of 193,152.

Sind is bounded on the north by Baluchistan, the Punjab and the State of Bahawalpur, on the east by the Rajputana States of Jaisalmer and Jodhpur; on the south by the Rann of Cutch and the Arabian Sea; and on the west by the Territory of the Jam of Las Bela and the Khan of Kalat.

MOUNTAINS

The only elevations deserving the name of mountains occur in the Kirthar range, which separates Sind from Baluchistan and attains in places a height of about seven thousand feet above sea-level sinking in the south to the Pab hills. The wild and rocky tract of Kohistan, in the western portion of Karachi district, forms almost the only remaining exception to the general flatness of the Province. Another off-shoot of the Kirthar chain, however, known as the Lakh range, extends in a barren mass eastward into the Kotri taluka of Karachi district. A few insignificant limestone ranges intersect the Indus valley, on one of which, known as the Ganjo hills, with an elevation of only hundred feet, stands the Talpur capital of Hyderabad. A second small chain, running in a north-westerly direction from the neighbourhood of Jaisalmer, attains towards the Indus a height of one hundred and fifty feet and forms the rocks on which are perched the towns of Rohri and Sukkur.

RIVERS

The Indus is by far the most important river of the Province. The classical name of this river was *Sindhu* (Sanskrit for an ocean) and Sindh was the country created and sustained by the river, without which it would be a Sahara. Its length is about eighteen hundred miles and for nearly a third of that (about 590 miles) it traverses the Province and annually, when the snow at its source begins to melt with the advance of spring, rises and overflows its banks and floods the low-lying country far and wide. Besides the Indus the Habb is the only permanent river in Sind and only the left bank of it belongs to the Province. Numerous torrent beds, known as *nais*, drain the hills after rain, discharging their waters into the sea, the Indus, or the Manchhar Lake and other *dhands*. The more important of the *nais* are the Malir, from which the city of Karachi obtains its drinking water supply, the Baran, which supplies Kohistan, and the Gaj.

CLIMATE

Owing to its prevalent aridity and the absence of the monsoons, the climate of Sind ranks among the hottest and most variable in India. The average temperature of the summer months is 95° and that of the winter months 60°. But the thermometer frequently rises in summer to 114° and occasionally to 120° while in winter it falls at night a few degrees below freezing point, and ranges even in the daytime from 40° to 80°. No other part of India has so long a continuance of excessively hot weather, owing to the deficiency of rain. The climate on the sea coast, however, is much more equable in temperature than in Upper Sind. In Northern Sind, the extremes of temperature are strongly marked. The thermometer at Shikarpur often sinks below freezing point in winter, and ice forms as late as February; yet in summer, for weeks together, the readings at midnight do not fall below 100°. Jacobabad boasts of the highest temperature yet recorded at an Indian meteorological station (127° in June 1919).

RAINFALL

On the verge of two monsoons Sind is unrefreshed by either. The south-west monsoon stops at Lakhpat in Cutch in the south-east; the north-east monsoon passes no farther than Karachi in the extreme south-west. The rainfall of Sind is thus scanty and irregular and it averages only about eight inches. The record of series of almost rainless seasons is occasionally broken by a sudden excessive fall. Of such deluges the most notable occurred at Karachi in 1902 when over seven inches fell in twenty-four hours, on 17th June.

SOIL

Excepting on and at the foot of the hills, and in the Desert of Thar and Parkar, all the soil of Sind is alluvial, consisting of sand and clay in a very fine state of pulverisation. The proportions of sand and clay differ in the soil of different situations affecting its consistency and porosity and the percentage of organic matter found present also varies—which differences are indicated by many vernacular names loosely used and often local. The following is an attempt at a rough classification of the principal varieties of soil so distinguished :—

(1) *Wariasi*, *i.e.*, loose sand deemed fit only for melon cultivation. But almost any crop will grow in *Wariasi* if it is sufficiently manured and watered; groundnuts, *til* and garden roots do particularly well. A large part of the cultivable area in Umarkot and other parts of the Thar and Parkar district is classed as *Wariasi*. It is also called *Daman* in Sukkur.

(2) *Kacho*, *i.e.*, the soil resulting from recent inundation. It is called *Rao Kacho* if used for *Rabi* cultivation the same year and *Pako Kacho* if it has had a season or two to dry and harden. *Latiari*, *Latwari* and *Lasiari* are local names for varieties of this and *Mithi* (sweet soil) is a general term applicable to it. *Gasiari* appears to indicate a larger proportion of sand. This soil is considered fit for almost all crops.

(3) *Chiki* or *Paki*, hard, baked soil, which has been submerged for a long time, also called *Khahuri*, *Tak*, *Rappa*, *Rip* and *Dhuban*. When rough and cloddy it is called *Khariro* and *Khariari*. It is very cohesive and heavy to work and therefore is not liked, but rice, wheat, *jambho*, and other crops do well in it.

(4) *Rao*, *Rae-Wari*, *i.e.*, soil enriched by the detritus of hill torrents. It is naturally very various, differing in consistency as the basis of it is sandy or loamy. A light and very dusty soil, found about Hyderabad and called *Dasar*, should apparently be classed with this; but the terms *Dasar* and *Gasar* are widely used for soft and light coloured but productive soils.

(5) Lastly there is *Kalar*, that is, land more or less spoiled for agricultural purposes by excess of salts. This has some distinguishing names. *Shor* and *That Kalar* are quite unfit for cultivation, while *Mitho Kalar* is capable of producing rice at least. A good clayey *Kalar* soil may have as much as six or seven per cent. of sodium chloride and may yet be fit for rice and after it for leguminous crops and oil seeds. This is of course because, the process of rice cultivation, during which water stands continuously in the fields and is frequently changed, washes out most of the salt. Such soil is known as *Dangissi*, or *Dangachhi*. *Kalrathi* is another name for soil in which *Kalar* is mixed with good earth. In these soils the salts are generally near the surface and can be washed out, so that regular irrigation, with drainage, may convert tracts which seemed to be hopelessly barren into fertile fields.

In the desert parts of Thar and Parkar all the soil is sand (called *Dago*), but nevertheless yields small crops of *bajri* after rain. Cultivation in that country is, however, generally confined to particular situations, such as flat valleys and shallow, temporary tanks, where there must be a good deal of organic matter from decayed acquatic vegetation. On the margin of the Rann also, there is hard soil, called *Kathi Zamin*, which is submerged in summer and yields *rabi* crops (wheat) after it dries.

SEASONS

There are two main cultivating seasons, *kharif* and *rabi*. The former extends normally from June to October and coincides for the first three months with the height of the inundation. The month for sowing is usually June, though occasionally seed, and especially rice seed, is put in May; and if the rise of the river to a high and steady level happens to be late, sowing not infrequently takes place in July. *Kharif* crops are usually harvested in October. The *rabi* season ordinarily comprises the period from October to March, though sowing may occur from September to early December, and reaping may go on into April. In the desert and on the hills, though the seasons are the same, the farmer's operations depending entirely on rain, vary with its variableness. *Kharif* sowing can rarely begin till well on in July and there is little or no *rabi*.

CROPS

Rice is by far the most important crop cultivated in Sind, occupying over a million acres. It is almost the only thing that can be grown in the annually inundated lands within the Delta of the Indus, but a larger quantity and much finer quality is produced in the Larkana district, in lands watered by the *nais* or mountain streams as well as those traversed by canals. In Hyderabad and Karachi also a great deal of rice is grown. After rice comes *bajri* in order of importance. This grain and *jowar* constitute the principal food of the working classes, but *bajri* is more wholesome and is much more extensively cultivated, especially in the Hyderabad district and Thar and Parkar. In Larkana and

Sukkur there is more *jowar*. Wheat comes after *bajri*. It is grown chiefly in the Larkana, Sukkur and Upper Sind Frontier districts. Barley, maize and a few other cereals are grown in insignificant quantities.

Pulses succeed cereals in importance and of the land under these a very large area is devoted to *matar*, called chickling vetch. It is grown chiefly in Larkana but also in Sukkur and the Upper Sind Frontier districts. Gram which is grown more in the Upper Sind Frontier than anywhere else is the only other pulse of much consequence. Passing over indigo, tobacco and other miscellaneous crops, none of which are cultivated on such a scale as to deserve notice, oilseeds and cotton remain. The area under oilseeds of all sorts in 1922-23 was nearly three lakhs of acres of which as much as two and a half lakhs of acres were occupied by rape and mustard (including *jambho*) alone; sesame is the only other oilseed worth mention. Thar and Parkar, Nawabshah and Hyderabad are the only cotton growing districts, the crop occupying only insignificant areas in the other districts.

In the year 1922-23, which was a normal year, rice occupied about twelve lakhs of acres, *bajri* nine and a quarter lakhs of acres and wheat and *jowar* about five lakhs of acres each. The area under gram amounted to about two lakhs of acres. Among oilseeds, rape and mustard occupied nearly two and a half lakhs of acres, while the area sown with sesame approached thirty thousand. Cotton occupied about three lakhs of acres. The area under tobacco was nearly eight thousand acres, most of which was found in Hyderabad, Nawabshah, Larkana and Sukkur. Of the four thousand acres under sugarcane, nearly one thousand acres were cultivated in each of the three southern districts of Karachi, Hyderabad and Thar and Parkar. Out of the total area under indigo of two and a half thousand, nearly two thousand acres were under that crop in Nawabshah alone.

Fruits and Vegetables.—Of fruits of the Province, the apples are of a peculiar, very small variety, excellent for cooking. Hyderabad is famous for them but they and peaches fail on the coast. Grapes of many varieties and excellent quality grow at Karachi as well as inland. Inferior sorts of mangoes are extensively cultivated and there is a peculiar long Sind mango. Sind plantains are poor but some varieties of Bombay plantains are grown in Karachi. The date palm grows almost everywhere but it is only in Upper Sind and especially at Sukkur that the fruit is of good quality. The melon or *kharbuz* and the water melon or *tarbuz* are much cultivated where sand with an under-current of water can be found, as in river beds. Jacobabad is famous for the former and Garhi Yasin for the latter.

The common European vegetables, Cabbages, Cauliflowers, Turnips, Green Peas, French Beans, Tomatoes, Beet root, Celery, etc., are very successfully grown at Karachi, Hyderabad, in all the Local Fund Gardens and in short wherever there is a demand for them. Others, which are used by Indians as well as Europeans are more widely cultivated. They are the Onion, Garlic, Radish, Carrot, Sweet Potato, Spinach, Brinjal or Egg-plant, *Bhendie* and Potato. The principal spices or condiments produced are Chillies, Coriander, Fennel and Mustard.

Trees and Grasses.—A large part of Sind consists of pastoral rather than agricultural country, abounding in trees and shrubs useful to cattle especially to camels and goats. Among these may be mentioned *Babul*, *Ber*, and *Khabar* (*Salvadoro persica*) which grows best on *Kalar* soil together with various groundplants of the goosefoot order known by the Sindhis as *Lani* which are greedily devoured by camels. The foliage of *Timar* (*Avicennia tomentosa*) provides unlimited provender for the same animals in the Delta. Fodder grasses are numerous; the best known are *Chhabar* (*Eleusine flagellifera* and *aegyptiaca*), *Hariali* or *Chibhar* (*Cynodon dactylon*) and *Karach* (*Paspalum sanguinale*). Indian Corn and Barley are often cultivated for green fodder and the straw of Rice, *Bajri* and *Jowar* are much used for feeding cattle and horses. Near large towns Lucerne and Guinea Grass are cultivated.

FOREST

The extent of forest land is small for a Province of so large an area, amounting to only about twelve hundred square miles, excluding the State of Khairpur. The forests are chiefly situated along the banks of the Indus, extending southward from Ghotki to the mid-delta. The forest growth consists of four chief sorts of trees, namely, *Acacia arabica* or *babul*, *Prosopis spicigera* or *Kandi*, *Populus euphratica* or *bahan* and two species of tamarisk, *Tamarix gallica* and *dioica*, called *lai* and *jhao* respectively. The *babul* is the staple tree of lower Sind, its wood yielding timber for boat building and fuel, its bark being used in tanning and its leaves and pods as fodder for camels and goats. *Kandi* is next in importance. It yields a good fuel but is of little use for building or other purposes; its pods are used as fodder for cattle, goats and camels in the same way as those of *babul*. *Bahan* yields wood for building and lacquer work. Tamarisk gives a good fuel and wood for agricultural implements and turnery. The shores of the Indus delta abound with low mangrove thickets, which yield good fuel and fodder. Among exotic trees are the *tali* (*Dalbergia sissoo*) and the tamarind.

CATTLE

Good cattle of medium size are bred in the Province. The milch cows are well known and are exported to other parts of the Presidency. Bullocks are chiefly used for draught or for turning irrigation wheels. Great herds of buffaloes graze on the swampy tracts of the Delta and *ghi* (clarified butter), made from their milk, forms an important item of export. The fat-tailed sheep and the goat abound in Upper Sind, Sukkur, Thar and Parkar and Kohistan. The horses, though small, are active, hardy and capable of enduring great fatigue. The Baluch of Upper Sind pay much attention to the breeding of mares. The camel of the one-humped species ranks first as a beast of burden, numbers being bred in the salt marshes of the Indus, in Hyderabad and the Kohistan. There is a strong and useful type of mule.

INDUSTRIES

Though chiefly an agricultural and pastoral country, Sind has a reputation for pottery, leathern work and carpets, which in design and finish are equal to the productions of any part of the Bombay Presidency. The chief articles produced in Hyderabad are blankets, coarse cotton cloth, camel fittings, metal work, lacquered work, enamel and gold and silver embroidery. Hala is famous for pottery and tiles, Bubak for carpets and Tatta for cotton *lungis*. The principal productions of Shikarpur are earthenware, metal vessels of all descriptions, coarse cotton cloth and leathern articles. Lacquered work, embroidered shoes, woollen carpets and saddle bags are the chief products of the Upper Sind Frontier district.

There are a number of cotton ginning mills in the Province mostly in Hyderabad. Many rice husking factories have been opened in the Larkana district. In Karachi district also there are numerous factories employing a large number of operatives.

The chief port in Sind is Karachi and it is also the focus of a number of trade routes from Afghanistan and Central Asia.

TRADE

The chief exports of Sind are cotton and wool raw, indigo, rice, wheat, hides, skins and bones, and oil-seeds. The chief imports are railway materials, cotton piece-goods, sugar, machinery and kerosene oil.

COMMUNICATIONS

The desert portion of the Province is accessible by camels. The so-called roads, which are only rough tracks, are of heavy sand and there are sand hills of varying heights to be ascended and descended. The Jodhpur-Bikaner Railway runs through the Desert from west to east, but the distance from Gadro railway station to the Desert markets is not less than the distance from Umarkot. The construction of the Mirpurkhas-Jhudo feeder has been of considerable use to the Desert markets and Jhudo has now become the principal trade centre of the Desert in place of Umarkot.

POPULATION, RELIGION AND LANGUAGES

The population of Sind according to the Census of 1921 was 3,279,377 of whom nearly three-quarters were Mahomedans and one-quarter Hindus. Roughly three-fourths of the population speak Sindhi. The only other languages of importance are Rajasthani, Balochi and Punjabi spoken by immigrants from Rajputana, Baluchistan and the Punjab. Gujarati is spoken in parts of Thar and Parkar and in Karachi City. In Karachi, Hyderabad and part of Upper Sind a dialect of Sindhi known as Siraiki is spoken.

OCCUPATIONS

Of the total population of the Province about forty per cent. live by direct labour on the land, about ten per cent. by revenue from land, a large number on the care of cattle, sheep and camels and the great bulk of the remainder by trading in the necessities of life and by domestic service. Only about two per cent. of the population live by arts and industries.

LIABILITY TO FAMINE

Thus it will be seen that Sind is almost solely dependent on agriculture for its existence. But it is in every way so different from other parts of the Presidency and, from the nature of its agricultural operations, so unlikely to suffer from serious famines that it scarcely seems necessary to treat it in the same way as other parts of the Presidency.

The average rainfall in Sind is only about five inches and a half per annum but fortunately Sind, so far as crops are concerned, may be said to be independent of rain, the whole country being covered by a network of large and small canals which convey the water of the river Indus to almost every part for the purpose of irrigating lands for cultivation. In some years the river rises high and the inundation is a good one; in others it rises but little and the area under

cultivation is comparatively small ; but that it should not rise sufficiently to bring any considerable proportion of the crops to maturity is almost an impossibility, or at all events so unlikely and remote a contingency that it need not be provided against. The great disadvantage which is felt at present is the uncertainty of the supply due to fluctuations in the surface level of the Indus. The *zamindar* never knows beforehand what to expect and agricultural operations suffer in consequence. But this defect will be remedied by the Lloyd Barrage and Canals scheme, one of the greatest irrigational projects of the world, which has recently been sanctioned by Government. Under this scheme the existing cultivated area will receive an assured water supply and in addition vast areas of waste land will be brought under cultivation.

Irrigation.—The canals as they serve the different districts of the Province have been described under the various accounts of the districts which they mostly serve and are not hence detailed here.

The peculiar conditions of Sind agriculture are clearly shown by the following table. The figures are for the year 1922-23 :—

District.	Net cropped area.	Irrigated area.	Percentage of irrigated on net cropped area.
	Acres.	Acres.	
Karachi	345,729	308,015	89·09
Hyderabad	598,006	590,282	98·71
Thar and Parkar	881,572	400,086	45·38
Nawabshah	476,188	441,506	92·72
Larkana	661,589	574,148	86·78
Sukkur	430,964	330,618	76·71
Upper Sind Frontier	531,245	531,245	100·00
	3,925,293	3,175,900	80·91

Sind requires three things—New canals to carry water from the river to distant lands, the removal of the periodical silt deposit from existing canals, and embankments to prevent the country from being flooded when the river is in high flood,—and these works have always afforded the means of employment for any number of persons likely to require relief. During the next ten years when the Barrage and the canals will be under construction, far more labour than is usually available in Sind will be employed. When the Barrage Scheme is complete the agricultural labour will be in much greater demand than before, partly owing to the greatly increased area under cultivation and partly owing to the perennial nature of the water supply in most of the new canals.

There are only two tracts in the Province which differ in their conditions from the rest of Sind. These are the Kohistan in the Karachi district and the desert portion of Thar and Parkar.

The Kohistan.—This is a portion of the Karachi district which is wholly dependent for its cultivation on rainfall. As its name implies, it is a hilly tract and it comprises the Kohistan Mahal, the Kohistan of the Tatta taluka, Tapas Habb, Gadap and Malir of the Karachi taluka and Tapa Band Virah and Dehs Ocho Lakhri Girwari Badhar and Tharri of the Kotri taluka. The tract is marked in yellow in the Irrigation map of the Province. Although liable to distress from failure of rain the acuteness of the distress is lessened by the fact that the people are accustomed in bad years to remove to the adjoining irrigated tracts of the Hyderabad district and of the Karachi, Kotri and Tatta talukas where they generally find employment, and there would in any case never be much difficulty in administering such relief as might, in exceptional circumstances, be found necessary.

Thar Parkar Desert.—The desert portion of the Thar and Parkar district is also marked in the above map in yellow. It includes the four talukas of Nagar, Chachro, Mithi and Diplo (area 7,478 square miles) and the desert portion of the Umarkot and Khipro talukas (area about 2,816 square miles).

The area shown in green in this map, though subject to scarcity, is close to the *Dhands, i.e.*, small lakes and marshes fed by the Eastern Nara, where water and pasture are abundant as well as land for cultivation. The effects of famine in this portion are therefore not such as would necessitate relief measure for the population. The tract to the west of the shaded portion is also protected to some extent by the proximity of the fertile Nara Valley. As a rule, relief works are not required in this tract. The large tract of country which is marked in yellow shading in the map is the area in which drought is most likely to necessitate relief measures. This portion of the country depends entirely on rain.

The people live by cattle breeding and cultivation. Insufficient rainfall leaves the population without their ordinary means of livelihood. In bad seasons large cattle owners migrate to distant places with their cattle and cultivators migrate to the Nara Valley and the Hyderabad district where they obtain work as labourers. But in years of severe drought a residuum of the population always requires help.

Nine-tenths of the population of this tract depend for their living directly and entirely upon agriculture or upon cattle or upon both—in most cases upon both. The remaining one-tenth is composed of petty traders whose trade is almost wholly confined to grain, cattle and *ghi*, and nearly all of whom own cattle themselves. Holdings are small, and the people are poor with few wants and live generally from hand to mouth. Field labour there is none, for the poorer people have nearly all got their own small holdings and a cow or donkey or two. The population is largely nomadic, and the graziers in particular are accustomed to wander over the Desert with their cattle.

FORECAST OF RELIEF WORKERS

Of the inhabitants the maximum number likely to require employment on relief works in a year of famine is five thousand, and the number to be otherwise relieved two thousand and a half. These numbers, however, are very liable to be increased by the conditions ruling at the time in the Nara Valley and other neighbouring tracts. In the Nara Valley, immigrants assemble, in time of need, not only from the Desert but also in large numbers from Marwar, that is, from the Jodhpur and Jesalmer Territories. They find employment, however, in a marvelous manner from different odd jobs.

FORMER FAMINES

In the desert tract of the Thar and Parkar district the season of **1911-12** was the worst since the famine of **1899-1900.** The rains failed and there was practically no cultivation. Emigration saved the situation to a great extent. About four-fifths of the population left the Desert and scattered in all directions, taking their cattle with them to the forests, where free grazing was allowed. The relief so afforded saved many head of cattle. Such of the population as remained in the Desert lived on their existing stocks of grain or made a living by working as labourers. The District Local Board sanctioned a large sum for the excavation of tanks, which provided work for a considerable number of persons, while the building of a Kacheri at Nagar Parkar and of three large schools at Diplo, Mithi and Chachro gave regular employment to others.

The season of **1915-16** was again marked by the failure of monsoon rain, and a fodder famine was experienced in the Desert Division. The population of the desert emigrated for the most part, taking with them as many of their cattle as they were able to remove. The grazing fees were generally remitted. This afforded considerable relief to distressed cattle owners.

The expectation of a famine in the Desert in the year **1918-19** proved groundless. In the month of September there was a fairly good fall of rain in Nagar Parkar, Diplo and Mithi. This produced sufficient grass for the cattle. Liberal grants of *takavi* were made to cultivators for their maintenance and for the upkeep of their cattle. Considerable amounts were also advanced for the sinking of new wells which provided labour.

No relief works were opened in the years **1911-12, 1915-16** and **1918-19** in the Desert or at any other place in the Province.

Apart from drought, Sind is liable to bad seasons from damage by floods, short inundations of the Indus, locusts, caterpillars, rats and other causes. These, however, never produce any serious distress and at the worst are met by remissions or suspensions of land revenue and by liberal advances of *takavi* loans. This will be seen from the record given in the Appendix.

Locusts.—It is to be noted that the Sind locust (*Acridium peregrinum*) is distinct from the Bombay or Deccan locust (*Acridium succinctum*). It differs from the latter in its habits, and visitations have to be dealt with on a different plan from that required in the Deccan.

The breeding grounds of the *Acridium peregrinum* lie in the sand hills of Western Rajputana and in the Suliman range. Here the flights remain comparatively inactive during the cold weather waiting for the warm showers which come in the latter part of the winter rains in the North-west Punjab and in the beginning of the south-west monsoon in Western Rajputana. When these rains have softened the hard sandy soil, locusts lay their eggs in it. Egg laying therefore takes place about March and April in the North-west Punjab and about June and July in Rajputana. Each female lays an agglutinated mass of from fifty to one hundred eggs each about the size of a small rice grain, in a hole about an inch deep which she bores with her horny ovipositor in the sand. The eggs hatch in about three weeks, and from them emerge young wingless locusts, which hop along the ground devouring the crops and gradually

increasing in size until they are over two months old, when they acquire wings. These insects devour almost any field or garden crop they come across and also attack the foliage of trees.

Though useful work can be done by collecting the eggs and by beating the winged insects off the crops, the best time to attack the insects is shortly after they hatch out from the eggs. When the hoppers appear, they form serried columns and march in a definite direction, and at this stage they can readily be driven into pits or any other kind of trap prepared to receive them.

Sind, however, is not one of the usual breeding grounds, and it is the flying locusts which have to be dealt with in the Province.

APPENDIX

Chronological Record of Floods, Locust-Plagues, etc., in Sind

1904-05—*The whole Province.*
Low inundation followed by severe frosts did great damage to the *rabi* crops. Oil seeds and leguminous crops suffered heavily.
Thar Parkar.
Insufficient rain.
Sukkur.
Winter crops suffered from frost.

1905-06—*Larkana, Sukkur and Upper Sind Frontier.*
Slight damage was caused by floods. In the Upper Sind Frontier district crops were also slightly damaged by insects.
Thar Parkar.
Crops were damaged by insects and winds in the Nara Valley and by locusts in the Desert.
Nawabshah.
Slight damage was caused to the *rabi* crops by locusts, caterpillars and frost.
Larkana, Karachi and Hyderabad.
A severe hail storm in the Larkana district and dust storms in the Karachi and Hyderabad districts were responsible for an appreciable part of the amount of remissions.

1906-07—*The whole Province.*
The river was low at the beginning of the season but subsequently the rise was rapid, and the high river and the heavy rain which followed caused a series of breaches in the river and canal embankments in almost every district. The remissions on account of floods amounted to Rs. 1,69,000.
Larkana, Upper Sind Frontier, Nawabshah, Hyderabad and Thar Parkar.
Locusts, grass-hoppers and other insects caused some damage and reduced the outturn.

1907-08—*The whole Province.*
The inundation was poor. Crops suffered throughout from shortage of water.
Larkana, Upper Sind Frontier and Hyderabad.
Locusts and other insects did considerable injury in the Larkana district.
Hyderabad, Sukkur, Larkana and Upper Sind Frontier.
In the Upper Sind Frontier and Hyderabad districts the damage was slight. The severe frost of March did considerable damage to wheat and leguminous crops.

1908-09—*The whole Province excepting Upper Sind Frontier.*
Floods in the Karachi district were destructive. A private relief fund was established, and sums aggregating Rs. 4,349 were distributed in the whole district. In the Hyderabad and Larkana districts they injured the crops to a large extent. In the other districts the damage was not serious.
Larkana, Upper Sind Frontier and Nawabshah.
Locusts, grass-hoppers and worms injured crops in many places, but the damage was slight. Crops in the Nawabshah district also suffered slightly from blight and frost.

1909-10—*Larkana, Thar Parkar and Upper Sind Frontier.*
Some tracts suffered from deficiency of water.
Karachi and Upper Sind Frontier.
Injury to crops by locusts and other insects.
Nawabshah and Larkana.
Floods caused some damage to crops.

1910-11—*Karachi, Larkana, Nawabshah and Hyderabad.*
High inundation and abnormal rainfall resulted in heavy floods which damaged the crops especially the rice crop in the Karachi district. In the Larkana district much loss was caused by rain-fed hill torrents and river floods. Some damage was also caused by floods in the Nawabshah and Hyderabad districts.
Larkana, Thar Parkar and Sukkur.
Slight injury by frost. *Rati* (rust) also caused some damage in the Thar Parkar district.
Upper Sind Frontier.
Rabi crops suffered from adverse winds and insufficient flooding by river spill.

1911-12—*The whole Province.*
The inundation was very unsatisfactory. The absence of rains and failure of hill torrents proved disastrous for the areas dependent on them. The Upper Sind Frontier and Sukkur districts suffered the most.
Upper Sind Frontier, Larkana, Sukkur and Thar Parkar.
Crops in the Upper Sind Frontier district were damaged by crickets and in the Larkana and Sukkur districts by locusts. The cotton crop in the Thar Parkar district suffered from boll worm.

1912-13—*Upper Sind Frontier, Larkana and Nawabshah.*
The late rise and early fall of the river adversely affected the crops.
Karachi and Larkana.
Floods and hill torrents caused considerable damage.
Karachi.
Locusts did some injury.

1913-14—*Larkana, Hyderabad and Karachi.*
In some low lying tracts the heavy rainfall resulted in breaches and floods which caused severe damage.
Upper Sind Frontier.
The grain crop was totally destroyed by insects and adverse winds.
Sukkur.
Some injury by frost.

1914-15—*The whole Province excepting Thar Parkar.*
High inundation and abundant rainfall resulted in breaches and floods which caused damage to the *kharif* crops. Hill torrents damaged the crops in parts of the Larkana district.
Upper Sind Frontier.
The *til* crop was almost wholly destroyed by adverse winds and insects. The *jowari* crop suffered from grass-hoppers and worms.
Larkana.
Locusts appeared and caused slight damage.
Thar Parkar.
Boll worm affected the cotton crop.
Sukkur.
The " mahlo " insect badly damaged the sesame crop.

1915-16—*The whole Province.*
The inundation was unusually low and the rainfall very scanty. The cultivated area was considerably reduced. Crops suffered everywhere. Locusts and other insects also did some damage to surviving *kharif* crops in the Upper Sind Frontier and Nawabshah districts.

1916-17—*Larkana, Nawabshah, Hyderabad and Karachi.*
The *kharif* crops were destroyed by floods from the river, hill torrents or floods due to breaches in the canal embankments. Considerable damage was also caused by frost in the Larkana district.
Thar Parkar and Nawabshah.
The *rabi* crops in the Jamrao tract suffered from deficiency of canal water.

1917-18—*Larkana.*
Heavy floods submerged large tracts of cultivation.
Thar Parkar.
The *bajri* crop was seriously damaged by heavy and untimely rain. Cotton was also greatly injured by frost.
Upper Sind Frontier, Hyderabad and Karachi.
Crops were damaged by insects and adverse winds in the Upper Sind Frontier district, by *rats* in the Hyderabad district and locusts in the Karachi district.
Sukkur.
The *jowari* crop was considerably damaged by heavy rains.

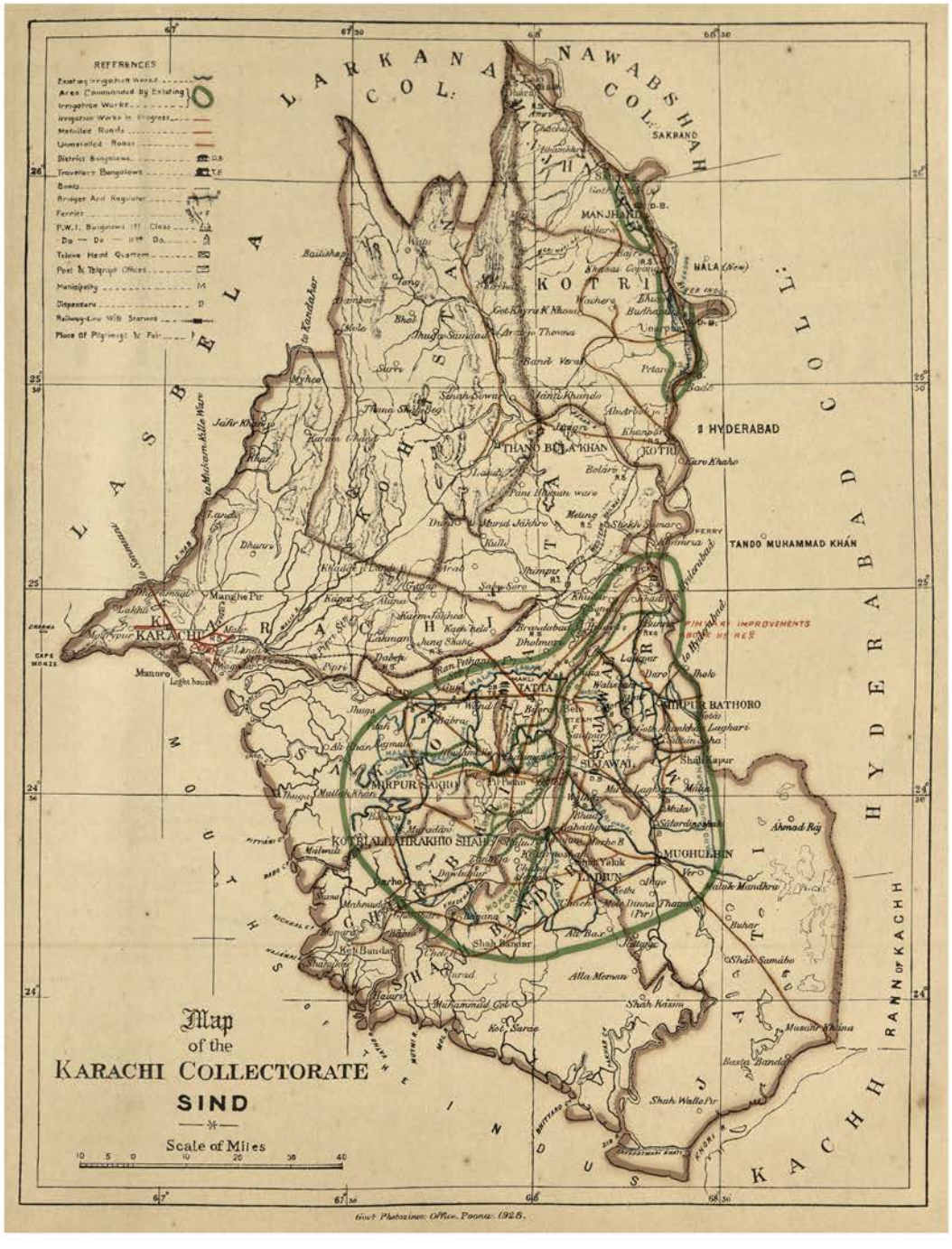
1918-19—*The whole Province.*
Owing to the low inundation and scanty rainfall there was a general failure of crops.

1919-20—*Karachi, Hyderabad and Larkana.*
Excessive rain caused great local damage in the Karachi district and the crops in the Hyderabad and Larkana districts suffered from floods and hill torrents.
Upper Sind Frontier and Larkana.
Frost caused serious damage in the Upper Sind Frontier and Larkana districts, and the *kharif* crops were severely damaged by insects in the Upper Sind Frontier district.
Sukkur.
Weevils and adverse winds damaged the *jowari* crop.

1920-21—*The whole Province.*
Owing to the unfavourable inundation and inadequate rainfall the crops suffered. Rats, locusts and other insects caused considerable damage in the Hyderabad and Karachi districts.

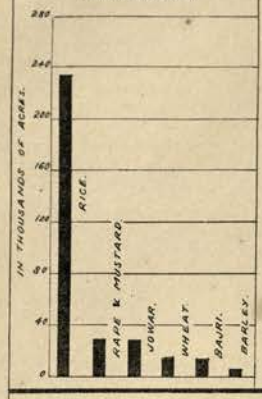
1921-22—*Thar Parkar, Nawabshah and Hyderabad.*
The belated rise of the river had an adverse effect on the cotton cultivation. Rats and insects caused considerable damage in the Hyderabad district.
Karachi and Larkana.
Floods and hill torrents in many cases destroyed the standing crops and caused considerable damage to gardens and vegetable fields.

1922-23—*Larkana.*
The Sehwan, Johi and Kakar talukas suffered from floods.
Thar Parkar.
Want of rain resulted in a diminution of the area under cultivation.
Karachi and Hyderabad.
Considerable damage was done by rats.


Map
of the
KARACHI COLLECTORATE
SIND
Scale of Miles
REFERENCES
LARKANA COL:
NAWABSHAH COL:
LASBELA
HYDERABAD COLL:
KACHH
RANN OF KACHH
MOUTHS OF THE INDUS
KARACHI
KOTRI
THANO BULA KHAN
TATTA
MIRPUR BATHORO
MIRPUR SAKRO
KOTRI ALLAHRAKHIO SHAH
MUGHULBIN
LADIUN
SUJAWAL
MANJHAND
HALA (New)
SAKRAND
HYDERABAD
TANDO MUHAMMAD KHAN
Manoro
Manghe Pir
Shah Bandar
Shah Kasim
Shah Wallo Pir
Basta Bandar
Alla Meman
Kot Sarae
Ahmad Raj
Shah Samabo
Musahi Khana
Kotri Bandar
Shah Bandar
Gov't Photozinco Office, Poona. 1925.

KARACHI DISTRICT.

RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER IRRIGATION.

ONE DOT = 1000 ACRES.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.

AREA UNDER CROPS.

JOWAR. ONE DOT = 100 ACRES.

BAJRI. ONE DOT = 100 ACRES.

RICE. ONE DOT = 1000 ACRES.

WHEAT. ONE DOT = 100 ACRES.

LANG ONE DOT = 10 ACRES.

JAMBHO ONE DOT = 100 ACRES.

NUMBER OF CATTLE.

1909-10

ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.

KARACHI

POSITION AND AREA

The Karachi District, named from its chief town, lies between 23° 35′ and 26° 22′ north latitude and between 66° 42′ and 68° 48′ east longitude and occupies the south-west corner of the Province of Sind. It has an area of 11,971 square miles. It is bounded on the north by Larkana; on the east by the Indus and Hyderabad District; on the south by the sea and the Khori Creek; and on the west by the sea and the state of Las Bela (Baluchistan), the river Habb forming for a considerable distance the line of demarcation.

PHYSICAL FEATURES

The district which covers a large tract of land stretching from the mouth of the Indus to the Baluchi boundary differs considerably in appearance from the general level of Sind by its possession of a hilly western region, lying in the Mahal of Kohistan and the taluka of Karachi. Numerous lateral ranges of considerable height here push forward into the plain from the Kirthar mountains and diversify the usually monotonous aspect of the arid surface by their spurs and offshoots. From this lofty and barren tract, intersected by deep and wide valleys, the general aspect of the country, as it runs south-eastward in a vast sloping plain, becomes more and more level, until in the extreme south the Indus delta presents a broad expanse of low flat alluvium, stretching away to the horizon in one unbroken sheet, varied only with the numerous creeks communicating with the ocean.

Rivers.—Apart from the Indus, the Habb is probably the most important river of the district. It is said to take its origin in the Baluchistan hills, not far from Kalat. It joins the Sind Frontier where it is crossed by the Kandahar road and defines it for the final seventy miles of its course and falls into the sea on the north-western side of Cape Monze. The next most important river in the district is the Baran, which rises in the Khirthar range, rounds its southern extremity, then flows southwards again to near Thano Bula Khan, where it turns eastward, cuts its way through the Laki hills and finally falls into the Indus four miles south of Kotri. Its total length is about ninety miles. The Malir, a stream of less size, drains the country north-east of Karachi for a distance of sixty miles and falls into Ghizri Bandar. The course of the Lyari is round the town of Karachi and its waters go into the harbour. Its rise after rain is very sudden. Elsewhere, especially in the north, there are many similar channels which carry rain water from the hills to the Indus, or diffuse it on the low grounds and make cultivation possible. The most important of these is the Sann, which often pours a great volume of water into the Indus.

Hills.—The hills of Sind, with few and unimportant exceptions, lie to the west of the Indus valley, and the Karachi district has a fair share of them. About thirty miles of the Kirthar range belong to the Karachi district. The next most important range is the Laki which first attracts attention near the town of that name in the Manjhand Mahal, a little to the north-west of which it commences. Running first due south this (Laki) range divides Kohistan from Kotri taluka and then, turning a little to the west near Thano Bula Khan, it divides Kohistan from Tatta taluka. The total length of this range is about eighty miles and it attains an elevation of 1,640 feet near its northern extremity. To the south and west of these two ranges there is a series of gradually decreasing lime-stone hills, all running more or less north and south. One such, the Kambu range about fifteen miles in length and attaining in the middle to 2,340 feet, seems to continue the Khirthar range beyond the Baran river running due south. West of this is the Dumbar range, about fifteen miles in length. West of this again, where the Habb river joins the Sind Frontier, the much higher Bedur range which forms the eastern water-shed of that river, sends a spur into Sind. Another well-marked line of hills runs east of the river from Mangho Pir to Cape Monze and eastward of this, the country round about Karachi is for the most part broken up into small ranges or ridges, individually insignificant. A large part of the Kotri taluka and Manjhand Mahal is also hilly and a hilly tract runs southward from Kotri to Jerruck and Tatta. The Makli hills close by Tatta, are a rocky elevation, eighteen miles in length by four in breadth well known on account of the tombs which have been erected upon them.

CLIMATE

The climate of Karachi city and the neighbouring country, which is in every direction open to the sea-breeze, possesses a great superiority over that prevailing throughout the remainder of Sind. The hill country of Kohistan is also cooler in summer and warmer in winter than is the case in the plains. In the north, on the other hand, near the barren Lakhi range of hills, the heat often becomes insupportable. The hot season commences about the middle or end of March, reaches its maximum in the month of July and lasts till the end of August, when the temperature becomes once more tolerably cool. The annual temperature averages 79° F. In the Indus valley part of the district, the climate is generally malarious and has very depressing effects on the character and physique of the residents.

RAINFALL

Rainfall is very precarious in this district. The average, for the district as a whole, is about seven inches in a year. During the last fifty-five years for which records are available, the maximum amount of rain that occurred was 41·18 inches. This was received at Shahabandar in 1913. On the other hand, the minimum amount of rain received during this period was only 0·10 inch, which fell at Manjhand during the year 1899.

SOIL AND CULTIVATION

The cultivation of the district is dependent on the Indus, which forms the eastern boundary of the district for several miles; on several canals taking out of it, and on the hill torrents of the Baran, Malir and others. The nature of the soil and cultivation in each taluka is briefly as follows:—

Tatta.—Its alluvial portion consists of a narrow irregular tract bordering on the Indus. The northern half is much interrupted by hills, whilst in the south the Makli hills skirt the western side of the taluka to the boundary of Ghorabari. The taluka is watered by the Kalri, Baghar and other canals. About 80 per cent. of the cultivation is by flow.

Mirpur Sakro.—About half of the taluka is unfit for inhabitation and has not been divided into *Dehs* (villages). The inhabited portion lies to the east. The western half consists mostly of *Kalar* land, while towards the sea tidal creeks break the coast line and, overflowing the land, form extensive mangrove swamps. The taluka is watered by the Baghar and other Government canals, but the water supply is only fair. About three-quarters of the cultivation is by flow and the rest by lift.

Ghorabari inclusive of Keti Mahal.—Through this taluka the waters of the river Indus find their principal outlet to the sea by the Ochito and its mouth and irrigate the land. The soil is all alluvial. In the south below Keti Bandar, there is a considerable area of *Bhal* lands frequently swamped by the sea, but on which red rice is freely cultivated. The water supply of the taluka away from the river is poor.

Karachi.—This is for the most part a hilly country which depends on rainfall for cultivation. It is in fact more pastoral than agricultural and the wealth of the taluka lies hence more in its stock than in its crops.

Kotri.—Kotri consists of two distinct portions, a hilly expanse known as the Band Virah Tapa, forming geographically part of the Kohistan and a strip of alluvial soil lying between the hilly portion and the River Indus. The latter is irrigated by the Baghdad, Chhandan, Vachero and other canals. The area of cultivation under flow and lift is about equal.

Kohistan Mahal.—This may be described as a succession of broad valleys lying between ranges of hills running generally north to south. The level both of plains and hills rises as one goes north. The little cultivation is entirely dependent on hill springs and on rain. Keeping sheep and goats is the chief occupation of the inhabitants.

Manjhand Mahal.—Most of this consists of rocky hills and high land unfit for cultivation. It is divided into two parts by the North Western Railway, which also approximately marks the boundary between lands depending for cultivation on rainfall and lands irrigated by canals or directly from the river. The irrigated portion is again divided into two by the Sann Nai, north of which the water supply is derived directly from the river, while the southern portion contains the Government canals Karo, Shah Panjo and Butho. Nearly half the cultivation is dependent on rain and the amount of flow cultivation is only three per cent. of the whole.

Shahbandar.—Its soil consists of the usual alluvial loam, but with an admixture of sand. The chief canals are the Sattah, Khanto, Ghar and Kodario. Almost the whole of the cultivation is by flow, only about three per cent. being lift.

Jati.—The portion of the taluka near the coast is a maze of the tidal creeks, and further inland a saline plain, with no cultivation and little vegetation.

scarcely inhabited by man or beast. The country towards the north-east is culturable waste land, for which at present there is no irrigation available. The principal canals are the Gungro, Saida, Mirza, Sattah and Gungri. Almost the whole of the cultivation is by flow, lift forming a very small proportion.

Sujawal.—Except for the great extent of perennial marshes found in the taluka, the soil is the usual alluvial loam of Sind, the deposit of the river Indus. The cultivation is mostly by flow.

Mirpur Bathoro is an alluvial plain well watered by the Pinyari and Mulchand and some minor canals. The level is comparatively high and the taluka is consequently safe from the great flood to which the adjoining depressions of Sujawal are occasionally subjected. The cultivation is mostly by flow.

The various kinds of soil in the district are so called by the people in consideration of the particular crops which can be grown upon them. Thus in practice, *kalrati* soil is only suitable for rice crops, *dasar* for *jowar*, *bajra* and green gram, *wariasi* for gourds and melons, *rao* for *jowar*, wheat and green gram. *Shor kalar* is unsuitable for any kind of crop.

CROPS

The principal crops grown in the district are :—

Kharif Crops—Rice.—Rice (area about two hundred and thirty thousand acres) is the staple food crop of the district and is cultivated in all parts except Karachi taluka and Kohistan and Manjhand Mahals. Both white and red rice are grown but the latter variety is the more common. The usual white varieties are known as *ratria* and *sathria*, whilst the red are called *motia*, *ganja* and *kambru*.

Jowar.—This crop which occupies an area of about twenty-seven thousand acres is almost exclusively grown in Kotri, Karachi and Tatta talukas and the Manjhand Mahal. Kotri and Manjhand alone occupy nearly two-thirds of the total area. Two varieties—white and red—are grown.

Bajri.—Except in the hilly tracts of Kohistan, *bajri* is grown throughout the district and occupies an area of about twelve thousand acres.

Sesame.—The cultivation of sesame is small (about one thousand acres) and generally distributed.

Mung (*green gram*), *Urd* (*black gram*).—These are cultivated throughout the district and cover an area of about seventeen thousand acres.

Rabi Crops—Wheat.—Practically the entire wheat crop (area nearly fifteen thousand acres) is grown along the river Indus in Kotri taluka and Manjhand Mahal. Two varieties—white and red—are grown.

Chana (*horse gram*).—This is chiefly cultivated in Kotri and Manjhand. The area is insignificant, being less than five hundred acres.

Barley (area nine thousand acres).—Barley is chiefly grown in Tatta, Karachi, Mirpur Sakro, Kotri and Sujawal.

Jambho.—*Jambho* which covers an area of about twenty to twenty-five thousand acres is grown everywhere but more particularly in the talukas of Jati, Sujawal and Mirpur Batoro which alone occupy nearly three-fourths of the total area under the crop.

Lang (chickling vetch).—This has an area of about six thousand acres and is grown principally in the talukas of Tatta, Kotri and Mirpur Sakro, each of which occupy an area of one and a half thousand acres under the crop.

Fruits and Vegetables.—The indigenous vegetables in common use are cultivated in all talukas. European vegetables are grown in the gardens of Karachi and Malir and also at the taluka headquarters. Fruit gardens are found at Malir and Karachi. The best mangoes, guavas, *popiyas* and plantains in the district are grown at Malir. Grapes are chiefly grown in Karachi. The date-palm only flourishes at Kotri. Cocoanut trees are found at Karachi and at Keti Bandar.

CATTLE

The chief domestic animals are camels, buffaloes, cows and oxen. The buffaloes are commonest in the deltaic swamps and produce *ghi* famous all over Western India. The Karachi cows are noted as good milkers and many of them are shipped to Bombay for sale. The best of these cattle are bred within a radius of thirty or forty miles from Karachi city, chiefly in the hill tracts. Out of a total of nearly two hundred thousand cattle, roughly twenty per cent. are plough oxen, nearly fifty-five per cent. milch cattle and twenty per cent. young stock. Cows number double the buffaloes. Sheep and goats number about one and half lakh ; donkeys and camels about fifteen thousand each and horses and ponies about eight thousand and are found all over the district. In 1919-20 the total number of cattle was 377,653 against 376,544 in 1915-16. Milch cattle and young stock, however, were found to have been reduced from 122 and 52 thousands to 113 and 39 thousands respectively during the period 1915-16 to 1919-20, probably owing to the severe famine of 1918-19. Plough-oxen also showed a slight decline. This deficit was made up by the increase in the number of sheep and goats which rose from 122,000 in 1915-16 to 141,000 in 1919-20. These figures show that uncertainties of weather or inundation may tell seriously on one or other kind of agricultural stock, and cause anxiety on that score.

FORESTS

Forests occupy an area of nearly 245 square miles of which twenty-five square miles are protected forests. The forests produce a considerable quantity of *babul* timber and there is a very active trade in fuel and charcoal. The produce goes by boat to Kotri and also by river and sea direct to Gujarat and Arabia. Large quantities are railed to Karachi for consumption there and for export. Apart from their value to the State generally, the forests afford occupation to a large number of persons during the cold season and are highly valuable as grazing grounds, and as a refuge for cattle in years of scarcity.

IRRIGATION

The principal irrigation systems in this district, besides minor direct canals, are the Baghar, the Pinyari, the Kalri and the Sattah. These systems traverse the talukas of the Tatta, Mirpur Bathoro, Sujawal, Jati, Shahbundar, Ghorabari and Mirpur Sakro.

Baghar Canal.—The Baghar canal is one of the deltaic mouths of the river Indus and takes off its right bank near Aghimani. It is ninety-three miles in length and passes through Tatta, Mirpur Sakro and Ghorabhari Talukas and tails into the sea through Sheikha creek. The bed width at the head is two hundred feet and its full supply depth is nineteen feet. The average discharge passing down it is 5,200 cubic feet per second. The canal had been working without any Regulator and the construction of one near its head was undertaken in 1922-23.

Pinyari Canal.—This originally was a branch of the Indus and is the first in importance from point of cultivation in the Karachi district. It takes off from the Left Bank of the Indus, a few miles south of Jerruck, at the point where the river has a very sharp double bend or " Horse Shoe ". The general course of the canal is due south and is fairly straight until after a length of seventy-three miles it enters the Sir creek at Jati. The bed width at head is one hundred feet, its full supply depth is twelve feet and a half, and the average discharge passing down it is 2,700 cubic feet per second.

Kalri Canal.—It takes off from the right bank of the Indus and after a distance of twenty-six miles bifurcates into the Kalri, Buthro and Khana Wah. Its main branch is the Narichach. The canal is forty-five feet wide at head and has a full supply depth of eight feet. The average discharge passing down it is 650 cubic feet per second.

Sattah Canal.—This was originally a channel of the Indus on the left bank but was subsequently converted into an irrigation canal. Improvements in the shape of excavating a new head and widening the original channel, etc., were carried out in the year 1903-04. The canal is forty-two feet wide with a full supply depth of eight feet and a half, and an average discharge of 850 cubic feet per second.

The Protective Embankments in the Karachi district mainly consist of the following bunds :—

On the Right Bank.—Sheikhani, Souda Hillaya, Panah Baghar and Baghar Uchito with loops. Total length of these is fifty-five miles.

On the Left Bank.—Mulchand Shahbunder, with the Belo Loops, Khanto Embankment and Kokawari. Total mileage of these is ninety-four miles.

TRADE AND INDUSTRIES

Within the district the movement of trade consists chiefly in the flowing together to Karachi of the rice, wheat, wool, bones, hides and other produce of the country and the distribution from Karachi, by way of the smaller towns, of piece-goods, sugar, kerosene oil and the miscellaneous manufactured articles from Bombay and Europe which people have learned to require. Among these iron-mongery and chemical dyes may be specially mentioned. The exports of the district, as of the province, always largely exceed the imports and consist almost entirely of raw produce, rice preponderating over all else. There are no arts or manufactures in the district of sufficient importance to deserve mention at all as an element in the trade, though from other points of view some, like the weaving of *lungis* (used by women as robes or shawls) at Tatta are interesting. The few local manufactures are confined to cotton cloth, silk scarves, carpets, rugs and the ordinary metal and earthenware. The manufacture of mats (*pankha*) from the rank grasses, *sar* and *kanh* that grow on the river banks, employs many hands. There are a few factories in the district, including cotton-presses, metal foundries, bone-mills, printing presses, one glass and one tile factory, an arsenal and the Railway and Port Trust Workshops which all put together give an employment to several thousands.

COMMUNICATIONS

Besides being the port of call of various steamer lines, Karachi is connected with two important railway systems and a number of trade-routes from

Afghanistan, Kalat and Central Asia. The North Western Railway links the district with the large grain-producing provinces of the Punjab and the United Provinces, while the metre gauge systems terminating at Hyderabad connect it with Rajputana and Bombay. Both systems afford railway communication with Delhi. Three important trade routes converge at Karachi placing it in direct communication with the interior of Sind and with Las Bela and Kalat in Baluchistan. There are three main lines of road starting from Karachi which follow the old trade routes—one to Tatta and on to Lakhpat in Cutch, and the other two to Sehwan for Shikarpur and the north. Of the latter, one passes through Kotri and is best known as the Hyderabad road. In the Delta the traffic is almost entirely by water. Numerous creeks and channels are connected by cross channels, so that small boats can make their way at high water in any direction within a distance of fifteen to twenty miles from the shore. Traffic between Keti Bandar and Karachi is mainly by sea except during the monsoon months. There are numerous ferries plying across the river Indus. The canals are on the whole well bridged. The Kohistan part of the district has no roads worth the name. The roads in other parts are mostly unmetalled but are usually kept in fairly good condition for cart and camel traffic.

POPULATION.

Out of a total population of 542,065 souls, the urban population is 238,988. Karachi city which alone absorbs 216,883 persons is fast growing in population owing to its importance as a sea-port. Nearly seventy-one per cent. of the population are Musalmans; the Hindus make nearly twenty-six per cent., Christians number about 10,000 and the remainder includes, amongst others, the Parsis and the Jews.

LANGUAGES

Sindhi language is spoken by sixty-four per cent. of the total population and five per cent. speak Baluchi; some other languages too are spoken, but chiefly in Karachi city, *e.g.*, eight per cent. speak Gujarati, seven per cent. Kachhi and five per cent. Hindi.

OCCUPATIONS

According to occupations, out of the total population of 542,065, 198,218 or nearly thirty-seven per cent. are supported by Agriculture; Industries account for 65,650 or about twelve per cent., Commerce for 98,554 or nearly seventeen per cent.; Professions and the Liberal Arts are responsible for 12,846 or nearly two and a half per cent. while the remainder 166,797 or roughly thirty-one per cent. represent persons following miscellaneous occupations. Of the agriculturists class, which all belongs to the rural areas, the owners of cattle, *i.e.*, all domestic animals including sheep, goats, horses and camels, and their breeders number 25,361. Sea-fishing is carried on principally by the Muhana tribe of Musalmans who reside for the most part in hamlets near Karachi. Fishing supports 14,730 persons in the district.

The density of the population works out to forty-six per square mile for the whole district or twenty-seven per square mile if the town of Karachi be excluded. The most populous rural tract is the Delta, especially the tulakas of Mirpur Bathoro and Sujawal which show 135 and 119 to the square mile respectively; and the least is, of course, the hilly country; the Kohistan Mahal showing only five per square mile.

ECONOMIC CONDITION

Nearly half the population of this district is urban. Trade and industries, and other occupations connected with or depending on them provide enough work to keep this section of the people employed. If prices in the urban area are high, wages are also correspondingly high. About an equal portion of the population lives upon agriculture, only the remainder being either owners and breeders of cattle or living on the charity of others. The agricultural population comprises two main classes, the *zemindar* and the *hari*. The *zemindar* is an occupant of land under Government but the *hari* is the real cultivator, there being very few peasant proprietors in the district. The *hari's* position is somewhat peculiar; he is neither a labourer, as he is not paid in wages, nor is he a tenant in the ordinary sense of the term as he can be driven out at the *zemindar's* will. He cultivates the *zemindar's* field and the produce is divided between him and the *zemindar*. At this division the *hari* gets a share of the produce, which varies largely with the nature of the irrigation (flow or lift) that he has employed, and according to whether he has supplied the seed or not. The rate generally for flow is half for the *hari* and half for the *zemindar* and for lift is 2 : 1 if he has provided the seed. The *zemindar* pays Government assessment, carries out any land improvements and clears the water channels. In some parts, *e.g.*, in Ghorabari and Shahbandar Talukas, a third man also intervenes as a supplier of seed; in such cases the *hari* gets only two-sixths, one-third out of his ordinary half share going to the seed supplier. The *hari* believes that he has to get out of the land only as much as may barely sustain him and his small family throughout the year. It may be that he does not get even as much, for he is usually constitutionally lazy (made so by the depressing climate of the 'Lar') takes up extensive areas to cultivate, and attends to them in a happy-go-lucky manner, careless as to whether the crops are grazed upon by his cattle, which he loves more than his field. Almost every *hari* has some cattle of his own and *haris* are not enough in number for the land available for the plough. These are two facts which the *zemindars* have to face in this district; the result is that they cannot make as much out of their lands as they would wish to. On the whole, the Karachi district is agriculturally one of the poorest areas in Sind. The water supply is not very regular, the soil is *Kalarish*, the lands are in many places exposed to flooding, and the climate is extremely enervating.

MIGRATION

The proportion of residents whose home is not in the district is very large. The city of Karachi especially attracts immigrants from many countries. The most numerous are artisans from Cutch and labourers from Makran in Baluchistan. Pathans, Punjabis, Baluchis, Kathiawaris, Marathas and Persians also settle here.

FAMINE

Famine is practically unknown in the district. The Kohistan, which comprises the hilly side of the district is liable to distress due to drought. But it is sparsely populated, and the residents, when they actually so suffer, come down into the Indus valley with their cattle—and there they easily find employment and livelihood for themselves and pasture for their cattle. In the years **1918-19** and **1920-21** alone, during the last two decades, there was some distress on account of low inundation and scanty rainfall. In **1918-19** the construction of large protective bund at a cost of five lakhs of rupees gave sufficient relief. Local distress due to floods is, however, more common; that in **1908-09, 1919-20** and **1921-22** is worth a mention. In the latter two years private relief funds were raised; a few thousand were collected and relief in cash and kind was provided to those who appeared the hardest hit.

Locusts and Rats.—Locusts rarely visit the district. Occasionally insects and rats destroy the crops to an extent. The Indian mole rat is the chief enemy of rice; its destruction was encouraged by offers of reward in the last year (*1922-23*). Remission or suspensions of land revenue and liberal advances of tagavi loans sufficiently meet the situation in years that may suffer from one cause or the other. It may be worth noting that in the years 1917-18 and 1920-21 over rupees eighty thousand and fifty thousand respectively were remitted on account of land revenue demands for reason of damage caused by rats alone.

KARACHI STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

Irrigation Abstract, 1922-23.

Cultivated and Uncultivated Area, 1918-19.

Irrigation Abstract, 1918-19.

Crops, 1922-23.

Crops, 1918-19.

Agricultural Stock, 1919-20.

Agricultural Stock, 1915-16.

KARACHI STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Karachi ..	..	..	..	..	..	..	1,112	22	1,139	22	..	..	..	..
2	Mirpur Sakro ..	19	..	..	..	..	..	..	2	2	4	..	..	..	..
3	Gheorbari ..	11	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Shahabunder ..	19	..	..	..	..	..	..	2	2	19	..	..	..	..
5	Jati ..	23	..	..	..	..	..	..	..	..	22	..	..	..	..
6	Sujawal ..	25	..	..	..	..	..	..	..	..	23	..	3	4	..
7	Mirpur Batoro ..	35	..	..	..	..	..	31	..	31	20	..	..	8	..
8	Tatta	22	..	..	..	..	..	..	..	..	13	..	280	2	..
9	Kotri	7	..	..	..	..	..	8	..	8	32	..	1	..	..
10	Manjhand Mahal ..	2	..	..	..	..	..	3	..	3	34	..	..	..	..
11	Kohistan Mahal ..	..	..	..	..	..	..	42	..	42	10	..	..	..	..
	Total ..	157	..	..	..	..	..	1,112	117	1,229	216	..	2	287	29

No.	Taluka.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.
1	Karachi ..	200	..	5
2	Mirpur Sakro ..	..	..	..
3	Gheorbari ..	..	..	..
4	Shahabunder ..	2	..	9
5	Jati ..	..	1	1
6	Sujawal ..	..	1	4
7	Mirpur Batoro ..	..	3	8
8	Tatta	280	1	2
9	Kotri	930	..	..
10	Manjhand Mahal ..	363	..	..
11	Kohistan Mahal ..	425	..	..
	Total ..	2,047	..	..

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Western Nara (Canals north of Kotri)	21,780	12,963	12,963	12,963	5,783	3,784	9,567
2	Pinyari	185,600	119,620	119,620	119,620	84,314	20,846	104,360
3	Kalri	40,372	28,900	28,900	28,900	26,164	5,455	31,619
4	Indus Canals—Right Bank ..	193,701	49,600	49,600	49,600	28,097	5,394	33,491
5	Indus Canals—Left Bank ..	84,948	42,258	42,258	42,258	36,168	4,549	40,717
6	Sattah	33,545	23,757	23,757	23,757	12,850	266	13,116
7	Begher	95,301	51,800	51,800	27,211	9,458	456	36,669
8	Bunds, north of Kotri ..	1,150	50	50	..	..	34	34
9	Bunds in the Karachi Canals District (Left Bank) ..	6,773	4,747	4,747	4,137	206	4,348	
10	Bunds in the Karachi Canals District (Right Bank) ..	4,490	3,710	3,710	5,061	1,057	6,118	
11	Other Canals (Mulchand) ..	13,522	9,091	9,091	3,811	1,221	5,032	
	Total ..	680,227	346,496	346,496	233,596	51,470	285,066	

Figures not available for the Civil District.

Holdings, 1921-22

No.	Taluka.	Number of Holdings. Under and up 5 acres.	Over 5 and up 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Average. Total Area.	Area of holding.	Assessment holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Karachi ..	569	985	492	127	14	2,187	75,448	34·4	25 1 2	0 11 7
2	Mirpur Sakro ..	335	370	353	171	17	1,256	70,383	56·0	61 8 7	1 1 7
3	Gheorbari ..	69	199	245	122	27	662	23,440	110·9	146 0 2	1 5 9
4	Shahabunder ..	540	569	240	60	12	1,221	53,089	47·7	96 14 8	2 2 4
5	Jati ..	241	455	203	100	33	1,032	58,370	56·5	112 6 9	1 15 10
6	Sujawal ..	361	586	255	94	24	1,318	56,071	42·5	102 4 7	2 6 9
7	Mirpur Batoro ..	649	873	380	72	6	1,982	72,163	36·4	90 0 10	2 7 6
8	Tatta	590	976	282	66	15	1,929	45,929	23·8	36 11 10	1 8 8
9	Kotri	671	1,599	195	53	2	2,520	63,982	21·9	19 7 4	0 14 0
10	Manjhand Mahal ..	173	651	166	39	10	1,045	34,694	33·2	39 12 5	1 3 2
11	Kohistan Mahal ..	..	..	..	..	..	..	..	..	..	..
	Total ..	4,004	7,265	3,219	906	160	15,554	602,569	38·7	60 12 10	1 9 1

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area (including Alienated Land in Government Villages. Population.	Incidence per head of population, including alienations
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Karachi ..	69,795	56,533	0 13 2	244,162	0 3 6
2	Mirpur Sakro ..	77,068	78,176	1 4 0	26,549	2 15 1
3	Gheorbari ..	43,785	1,01,854	2 5 3	37,660	2 11 3
4	Shahabunder ..	42,344	1,18,567	2 12 10	34,607	3 6 1
5	Jati ..	40,661	1,10,521	2 11 6	31,845	3 7 6
6	Sujawal ..	45,310	1,33,948	2 15 4	32,062	4 2 10
7	Mirpur Batoro ..	56,417	1,72,047	3 0 10	36,369	4 11 5
8	Tatta	23,867	67,579	2 9 10	39,410	1 11 5
9	Kotri	24,208	56,420	2 5 3	33,229	1 11 5
10	Manjhand Mahal ..	18,265	32,983	1 12 11	17,495	1 14 2
11	Kohistan Mahal ..	98,674	2,584	0 0 5	8,681	0 4 9
	Total ..	491,344	9,31,217	1 14 4	542,065	1 11 7

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Western Nara (Canals north of Kotri)	21,780	12,963	12,963	12,963	3,536	2,882	6,418
2	Pinyari	138,032	92,789	92,789	70,733	14,669	12,766	27,435
3	Kalri	36,153	25,260	25,260	10,937	1,489	12,496	
4	Indus Canals—Right Bank ..	80,545	31,479	26,801	2,586	29,387		
5	Indus Canals—Left Bank ..	147,391	57,634	39,426	2,584	33,010		
6	Sattah	60,976	14,059	13,493	549	14,039		
7	Begher	67,158	26,082	26,171	3,561	29,732		
8	Bunds, north of Kotri ..	1,150	605	..	57	57		
9	Bunds in the Karachi Canals District (left Bank) ..	23,520	..	5,248	3,408	372	3,780	
10	Bunds in the Karachi Canals District (Right Bank) ..	9,740	..	4,986	4,672	450	5,122	
11	Other Canals (Mulchand) ..	14,501	..	3,206	4,906	1,000	5,906	
	Total ..	600,894	346,496	274,311	195,080	30,599	225,679	

Figures not available for the Civil District.

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Karachi ..	Maximum 1869 ..	2·44	1·12	1·69	..	..	0·19	12·94	1·33	8·23	..	..	..	27·94
		Minimum 1871 ..	..	0·36	..	..	..	..	0·05	..	..	..	0·04	0·02	0·48
		Average	0·52	0·45	0·35	0·17	0·08	0·99	2·93	1·46	0·49	0·01	0·13	..	7·62
		Rainfall for 1922-23 ..	0·31	1·11	..	..	..	..	0·19	1·45	0·17	..	..	..	3·21
		Maximum 1894 ..	1·83	0·82	0·02	..	..	0·64	21·13	0·05	..	..	..	0·34	24·24
2	Manora ..	Minimum 1883 ..	0·35	..	0·02	..	..	..	..	..	..	..	..	..	0·64
		Average	0·64	0·31	0·39	0·27	0·10	0·64	1·56	2·46	0·39	0·02	..	0·17	6·46
		Rainfall for 1922-23 ..	0·34	1·22	..	..	..	..	0·18	1·45	0·17	..	..	..	3·36
		Maximum 1878 ..	..	0·10	..	..	..	12·05	11·74	7·18	0·12	..	..	..	31·14
3	Mirpur Sakro ..	Minimum 1899 ..	..	..	0·31	..	..	..	..	..	..	..	0·01	..	0·32
		Average	0·16	0·16	0·09	0·04	0·32	0·41	1·63	1·86	0·65	0·05	..	0·03	5·44
		Rainfall for 1922-23 ..	0·10	0·51	..	..	..	0·05	0·20	0·42	..	..	..	..	1·30
		Maximum 1913 ..	..	0·10	..	..	..	..	19·83	15·65	..	..	..	0·04	35·64
4	Gheobari ..	Minimum 1918 ..	..	..	0·10	0·04	..	..	..	..	..	..	..	0·20	0·34
		Average	0·14	0·13	0·19	0·09	0·33	0·55	2·81	5·27	0·63	0·12	..	0·03	7·54
		Rainfall for 1922-23 ..	0·06	0·75	..	..	..	0·01	0·92	0·83	0·26	..	..	0·01	1·99
		Maximum 1878 ..	0·16	0·48	..	..	..	4·29	14·71	4·91	0·58	..	..	..	25·13
5	Keti Bunder ..	Minimum 1899 ..	..	..	0·08	..	..	..	..	0·08	..	..	0·08	..	0·20
		Average	0·26	0·22	0·13	0·20	0·25	0·95	1·29	1·62	0·47	0·21	0·02	0·14	5·77
		Rainfall for 1922-23 ..	0·04	1·95	..	..	..	..	0·04	0·33	..	..	..	0·46	2·82
		Maximum 1913 ..	..	..	..	..	..	0·19	17·16	20·64	3·14	..	..	9·05	41·18
6	Shahbunder (Ladies)	Minimum 1899 ..	..	..	0·17	..	..	..	..	..	..	..	..	..	0·17
		Average	0·19	0·25	0·21	0·04	0·13	0·77	5·13	2·39	0·78	0·03	0·01	0·03	9·96
		Rainfall for 1922-23 ..	0·04	0·72	..	..	..	0·13	0·23	0·89	0·12	..	..	..	2·13
		Maximum 1913 ..	..	0·05	..	..	..	0·03	22·68	12·55	3·45	..	..	0·04	38·80
7	Jati ..	Minimum 1899 ..	..	..	0·03	0·49	0·13	..	..	..	..	..	..	..	0·45
		Average	0·05	0·17	0·10	0·13	0·39	0·78	4·48	3·07	0·61	0·41	0·01	0·09	9·25
		Rainfall for 1922-23 ..	..	0·48	..	..	..	0·07	0·23	1·65	0·04	..	..	..	2·47
		Maximum 1913 ..	..	0·04	0·05	..	..	0·03	27·94	10·09	2·43	..	..	..	40·59
8	Sujawal ..	Minimum 1899 ..	..	..	..	..	..	..	..	0·39	..	..	..	0·13	0·52
		Average	0·18	0·11	0·08	0·07	0·35	0·47	3·07	2·55	0·87	0·10	0·01	0·02	7·88
		Rainfall for 1922-23 ..	0·02	0·39	..	..	..	..	0·04	1·63	0·04	..	..	..	2·22
		Maximum 1913 ..	..	0·05	0·15	..	..	0·01	21·22	10·71	3·34	..	..	0·08	35·56
9	Mirpur Batoro ..	Minimum 1899 ..	..	..	0·02	..	..	..	..	..	..	..	..	..	0·42
		Average	0·16	0·17	0·14	0·03	0·35	0·43	3·64	2·94	1·18	0·03	0·01	0·03	9·11
		Rainfall for 1922-23 ..	..	0·16	..	..	..	..	0·18	2·60	0·42	..	..	..	3·36
		Maximum 1913 ..	..	0·15	0·09	..	..	0·02	25·93	10·33	1·41	..	0·04	0·10	37·98
10	Tatta ..	Minimum 1918 ..	..	..	0·29	..	..	..	..	0·05	..	..	..	0·29	0·63
		Average	0·23	0·35	0·20	0·16	0·25	0·74	4·09	2·22	0·58	0·01	0·11	0·06	8·85
		Rainfall for 1922-23 ..	0·02	0·68	..	..	..	0·03	0·20	0·85	0·07	..	..	0·08	1·93
		Maximum 1908 ..	0·78	..	..	..	..	..	17·12	3·62	..	..	..	..	21·52
11	Jarruck ..	Minimum 1899 ..	..	..	0·37	0·09	..	..	..	..	..	..	..	..	0·46
		Average	0·19	0·29	0·26	0·02	0·19	0·58	3·05	1·70	0·42	..	0·01	0·06	6·77
		Rainfall for 1922-23 ..	0·07	0·70	..	0·15	..	..	0·12	1·93	..	..	..	..	2·97
		Maximum 1908 ..	0·50	..	..	..	..	..	20·21	2·52	..	..	..	..	23·23
12	Kotri ..	Minimum 1899 ..	..	..	0·40	..	0·01	..	..	0·05	..	..	..	..	0·47
		Average	0·07	0·17	0·14	0·07	0·45	0·31	1·80	2·38	1·04	0·12	..	0·08	6·63
		Rainfall for 1922-23 ..	0·03	0·23	..	..	..	..	0·23	2·93	..	..	..	..	3·44
		Maximum 1878 ..	..	1·80	0·05	..	..	1·70	9·22	4·90	..	..	..	..	19·22
13	Manjhand ..	Minimum 1899 ..	..	..	0·10	..	..	..	..	..	..	..	..	..	0·10
		Average	0·02	0·10	0·09	0·19	0·13	0·37	0·28	2·55	0·42	..	..	0·03	3·88
		Rainfall for 1922-23 ..	0·03	0·11	..	..	..	..	..	0·50	..	..	..	..	0·99
		Maximum 1913 ..	..	3·46	0·10	..	..	0·24	17·10	9·37	0·73	..	0·06	0·49	31·55
14	Bula Khan's Thano	Minimum 1899 ..	..	..	0·15	..	..	..	..	..	..	..	..	..	0·15
		Average	0·16	0·31	0·09	0·13	0·53	0·42	1·85	2·71	1·02	0·03	..	0·12	7·37
		Rainfall for 1922-23 ..	0·25	0·48	..	..	..	..	0·23	2·39	0·74	..	..	..	4·09

Temperature Details (Karachi).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	78	77	80	84	89	91	87	85	85	87	84	71
	,, minimum ..	59	61	65	74	80	82	80	78	75	74	67	59
	Absolute maximum ..	82	86	89	90	95	112	91	88	87	98	89	84
	,, minimum ..	52	55	58	70	74	81	76	74	71	69	61	53
1914	Mean maximum ..	77	75	81	84	88	92	88	87	88	88	87	78
	,, minimum ..	59	59	66	73	78	82	81	79	78	76	71	59
	Absolute maximum ..	81	80	94	96	96	98	93	100	96	93	95	85
	,, minimum ..	55	52	57	67	76	77	76	77	75	72	66	52
1915	Mean maximum ..	76	77	81	84	88	90	91	89	86	85	90	85
	,, minimum ..	57	58	69	72	80	82	82	79	77	77	66	60
	Absolute maximum ..	81	83	91	89	90	96	97	89	89	100	92	86
	,, minimum ..	53	49	61	63	72	78	80	76	74	70	59	53
1916	Mean maximum ..	77	75	82	85	90	90	89	87	87	89	84	78
	,, minimum ..	60	58	69	75	82	81	78	78	74	82	68	58
	Absolute maximum ..	86	79	88	99	106	105	95	91	91	96	92	83
	,, minimum ..	56	45	61	72	71	79	76	75	75	65	56	53
1917	Mean maximum ..	77	79	82	84	88	91	88	84	84	88	83	77
	,, minimum ..	59	63	68	74	77	82	81	77	76	72	69	58
	Absolute maximum ..	81	87	90	99	91	96	92	87	86	96	90	82
	,, minimum ..	57	56	62	68	71	79	78	73	73	63	57	48
1918	Mean maximum ..	76	76	80	82	88	88	87	83	83	87	85	78
	,, minimum ..	54	62	67	72	80	82	81	76	75	72	66	59
	Absolute maximum ..	81	84	88	92	91	90	89	86	85	97	91	84
	,, minimum ..	48	50	58	63	75	81	77	74	73	67	62	52
1919	Mean maximum ..	75	76	80	83	88	88	88	85	84	87	86	77
	,, minimum ..	56	60	68	73	80	81	81	78	75	72	65	58
	Absolute maximum ..	79	84	94	86	92	91	93	88	86	94	88	85
	,, minimum ..	50	53	61	69	76	78	76	73	72	63	61	53
1920	Mean maximum ..	76	73	83	86	90	92	89	85	85	87	87	77
	,, minimum ..	57	59	69	72	78	83	82	79	76	73	68	59
	Absolute maximum ..	81	89	93	96	107	103	92	88	87	100	96	93
	,, minimum ..	51	43	63	65	71	81	76	76	77	77	68	65
1921	Mean maximum ..	76	78	82	86	88	90	88	85	86	86	86	78
	,, minimum ..	57	60	68	75	78	82	80	78	77	73	68	61
	Absolute maximum ..	81	87	98	91	99	92	96	88	95	93	92	84
	,, minimum ..	51	53	63	66	73	79	74	73	73	67	63	55
1922	Mean maximum ..	75	79	81	87	88	90	90	85	85	85	85	78
	,, minimum ..	57	61	68	73	77	82	82	82	77	77	72	62
	Absolute maximum ..	78	85	85	100	104	93	93	88	87	95	90	82
	,, minimum ..	50	56	58	67	72	81	79	83	74	68	60	54

Prices—Pre-war Normal.

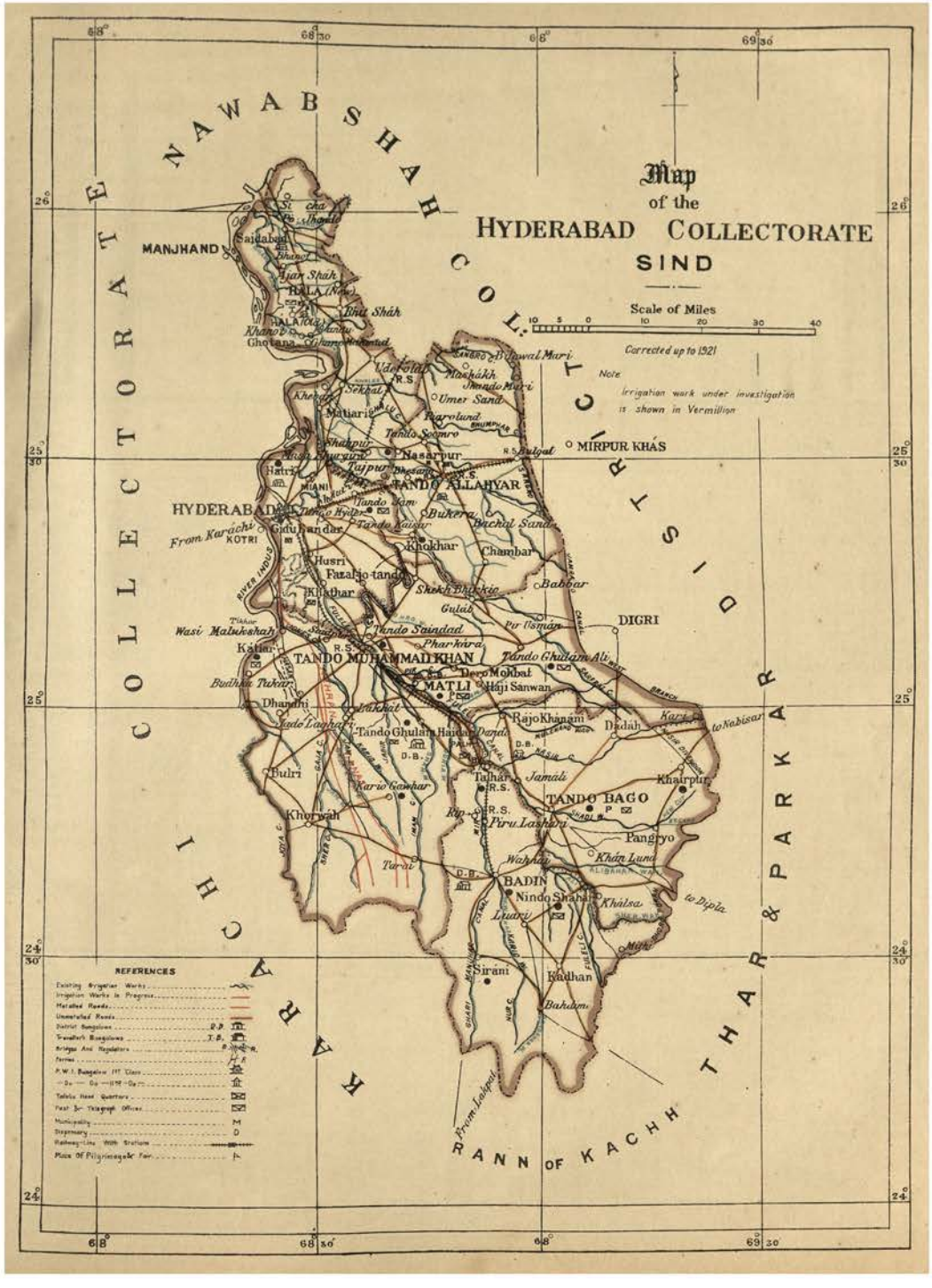
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Moong.	Kaddi.	Dry grass.	Wages per diem per man. Skilled Labour	Ordinary Labour.	Field Labour.
								Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter towns.									
1	Karachi ..	24	25	21	21	63	86	1 7 10	0 10 5	0 10 3
	Non-headquarter towns.									
2	Mirpur Sakro ..	30	27	23	25	..	..	1 3 0	0 8 0	0 5 7
3	Gheorbari ..	..	22	21	23	..	..	1 4 8	0 9 7	0 7 0
4	Shahabunder ..	22	25	22	19	..	..	1 0 10	0 9 7	0 5 7
5	Jati ..	..	26	25	23	..	..	1 2 0	0 6 5	0 5 7
6	Sujawal ..	26	26	21	24	..	..	1 0 10	0 7 10	0 7 7
7	Mirpur Bathoro ..	32	27	21	24	127	146	1 1 1	0 10 6	0 7 7
8	Tatta	29	24	21	23	84	84	1 2 0	0 9 3	0 7 7
9	Kotri	24	24	21	22	90	90	1 6 2	0 8 0	0 5 7
10	Manjhand Mahal ..	26	25	15	17	96	96	1 4 0	0 8 6	0 5 6
11	Kohistan Mahal ..	28	28	20	18	25	45	1 4 6	0 8 6	0 6 0
	Average of the non-headquarter towns..	26	25	21	21	75	91	1 2 10	0 7 4	0 7 7

Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Moong.	Jowari-Kadbi.	Dry grass.	Wages per diem per man. Skilled Labour	Ordinary Labour.	Field Labour.
								Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter town.									
1	Karachi ..	16	18	..	..	30	30	2 4 0	1 4 0	1 2 0
	Non-headquarter towns.									
2	Mirpur Sakro ..	..	20	19	15	..	..	1 8 0	0 12 0	0 10 0
3	Gheorbari ..	..	..	17	14	..	..	1 14 0	0 12 0	0 10 0
4	Shahabunder ..	..	23	20	16	..	..	1 14 0	0 12 0	0 10 0
5	Jati ..	..	20	18	15	..	..	1 8 0	0 10 8	0 8 0
6	Sujawal ..	..	19	18	15	..	..	1 8 0	0 10 8	0 8 0
7	Mirpur Bathoro ..	48	20	18	15	..	..	1 8 0	0 12 0	0 8 0
8	Tatta	..	20	18	14	..	..	1 8 0	0 12 0	0 8 0
9	Kotri	25	20	18	15	35	..	1 8 0	0 12 0	0 8 0
10	Manjhand Mahal ..	22	20	15	13	80	..	1 2 0	0 12 0	0 10 0
11	Kohistan Mahal ..	..	..	..	..	..	56	1 8 0	0 12 0	0 10 0
	Average of the non-headquarter towns..	22	19	17	16	57	43	1 13 10	0 12 6	0 10 5

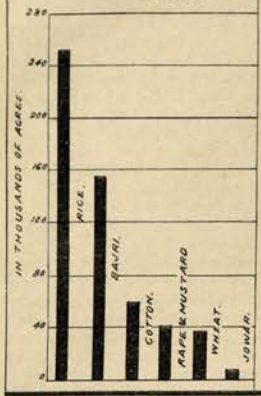
Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

Month.	1911-12. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs	Lbs.	No.	No.	No.	No.	Lbs	Lbs.
					No	Famine												
					Relief	Works	opened.											
Average for the period ..																		

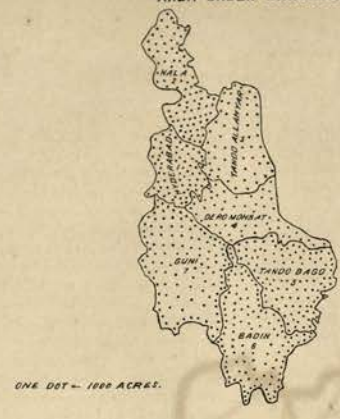

Map
of the
HYDERABAD COLLECTORATE
SIND
Scale of Miles
Corrected up to 1921
Note
Irrigation work under investigation is shown in Vermillion
NAWABSHAH COLLECTORATE
KARACHI DISTRICT
THAR & PARKAR
RANN OF KACHH
MANJHAND
HALA
HYDERABAD
KOTRI
TANDO ALLAHYAR
MIRPUR KHÁS
DIGRI
TANDO MUHAMMAD KHAN
MATLI
TANDO BAGO
BADIN
Nasarpur
Matiari
Khokhar
Chambar
Bulri
Khorwah
Khairpur
Pangryo
Khán Lund
Nindo Shahani
Khálsa
Kadhan
Bahdam
Sirani
Talhar
Rajo Khanani
Dadah
Dhandhi
Kario Gahar
Tando Ghulam Haidar
Tando Ghulam Ali
Tando Saindad
Pharkara
Dero Mohbat
Haji Sanwan
Pir Usmán
Bubbar
Gulab
Husri
Fazal-jo-tando
Khathar
Wasi Malukshah
Kátiar
Budhka Takar
Jado Laghari
Lakhat
Tarai
Wahhai
Luari
Piru Lashari
Jamáli
Bhit Sháh
Ghotana
Shahpur
Tajpur
Bukera
Bachal Sand
Umer Sand
Sekhat
Mashkáh
Jhendo Mari
Bijawal Mari
Tando Soomro
Tando Jam
Tando Kaisar
Gidu Bandar
From Karáchi
From Lakpat
to Nabisar
to Dipla
Scale of Miles
REFERENCES
Existing Irrigation Works
Irrigation Works in Progress
Metalled Roads
Unmetalled Roads
District Bungalows
Travellers' Bungalows
Bridges and Regulators
Forests
P.W.I. Bungalow 1st Class
Do — Do — 2nd Class
Taluka Head Quarters
Post & Telegraph Offices
Municipality
Dispensary
Railway-Line With Stations
Place Of Pilgrimage & Fair

HYDERABAD DISTRICT.

RELATIVE AREA OF PRINCIPAL CROPS.

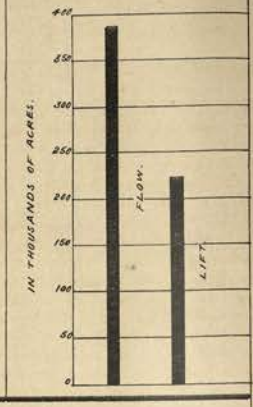


AREA UNDER IRRIGATION.



ONE DOT = 1000 ACRES.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



AREA UNDER CROPS.

BAJRI. ONE DOT = 1000 ACRES.

RICE. ONE DOT = 1000 ACRES.

WHEAT. ONE DOT = 100 ACRES.

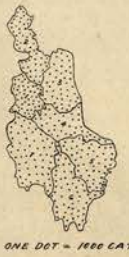
TOBACCO. ONE DOT = 10 ACRES

JAMBHO ONE DOT = 100 ACRES.

COTTON. ONE DOT = 100 ACRES.

NUMBER OF CATTLE.

1909-10



ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.

HYDERABAD

POSITION AND AREA

The Hyderabad district is situated on the left bank of the river Indus between 24° 12′ and 26° 18′ north latitude and 68° 20′ and 69° 25′ east longitude and covers an area of 4,417 square miles. It is bounded on the north by the Nawabshah district, on the east by the Nawabshah and the Thar and Parkar districts, on the south by the Rann of Cutch, and on the west by the river Indus and the Karachi district.

PHYSICAL FEATURES

The district is very uniform in character, being a vast alluvial plain diversified by a few hills and rivers. Fertile along the course of the Indus, which forms its western boundary, it degenerates towards the east into sandy tracts, which now have, however, by the construction of canals, been reclaimed from the desert and have become most fertile regions. The monotony of the great flats is relieved by the fringe of forests which marks the course of the river and by the avenue of trees that line the irrigation channels branching east-ward from the beneficent stream. The Tando sub-division in the south of the district has special features in its large natural water-courses (*dhoras*) and grass-covered depressions (*Chandans or dhands*) which retain rain and surplus canal water for many months and nourish a luxuriant growth of *babul* trees on their margins.

There are no hills worthy of notice in the district, except the low-ridge of lime-stone on which the city of Hyderabad is built and which runs south for a distance of about fourteen miles from that point. The highest peak " Gaho " is about two hundred and fifty feet above sea level, the surrounding ground level being about sixty feet. These hills locally known as " Ganjo Takar " yield abundant marine fossils, and supplies of lime-stone which are excavated by convict labour and used as ballast by the North-Western Railway.

The Indus runs along the western boundary of the district for nearly a hundred miles, and is bridged opposite Kotri. An ancient course of the Indus to the east of Hyderabad city is indicated by the Fuleli river, which takes off from the main stream a little above the Kotri bridge. The Fuleli is now canalised and has a perennial supply. The waters of the Indus are restrained by strong protective embankments, and though erosion occurs, floods are rare.

CLIMATE AND RAINFALL

The temperature of the district, though hot, is mitigated by breezes from the sea, which blow with considerable force, from the beginning of the monsoon, almost incessantly till the middle of September. During this period 100° F. may be taken as the ordinary maximum of the day. Before the monsoon, however, the weather is extremely hot and dry and in the month of May a temperature of 119° F. has often been recorded. The minimum temperature remains at about 80° F. from the opening of the monsoon to the end of September when it begins to fall ; but the heat of the day does not much abate till the end of November. During January and February the thermometer seldom rises above 80° F. and during the night has been known to fall below freezing point. Fogs are not uncommon in the cold season. In the north of the district greater extremes of heat and cold are met with, while in the south the proximity of the sea adds moisture to the air. In the Tando sub-division fevers are prevalent in consequence of the swamps especially as the inundation recedes ; but on the whole, the district, in normal years, is healthy.

The normal annual rainfall is about seven and a half inches. During the last forty-five years the maximum amount of rainfall recorded in a year is 39·03 inches at Badin in 1913 ; the minimum rainfall which occurred at Tando Bago in 1899 was only 0·08 inches.

SOIL

With the exception of the isolated patch of lime-stone near Hyderabad the whole of the district is of alluvial formation and the constituents of the soil present little variation. For a short distance from the foot of the hills the soil contains a large admixture of detritus directly derived from their slopes, but elsewhere clay and sand are its principal ingredients and one of the two factors by which the composition of the various soils is differentiated is the extent to which the clay or the sand predominates. The other criterion of the character of a soil is the absence of an injurious amount of natural salts. These occur in every taluka but are found in greater quantities in the south.

CROPS

The principal *kharif* crops are rice, *bajri* and cotton and the chief *rabi* crops are wheat and *jambho*.

Rice.—Rice occupies an area of about two hundred and fifty thousand acres and the cultivation of the crop is chiefly confined to the low-lying talukas of Badin, Guni and Tando Bago.

Bajri.—*Bajri* with an area of nearly one and a half lakh of acres is mostly grown in the north of the district, Hyderabad, Hala and Tando Allahyar with about thirty thousand acres each, and Guni and Dero Mohbat with roughly twenty thousand acres each, being the chief centres of cultivation.

Cotton.—Cotton with an area of over fifty thousand acres is mostly confined to the three northern talukas Hyderabad, Hala and Tando Allahyar, which put together account for nearly eighty-five per cent. of the total area.

Jowar.—*Jowar* occupies an insignificant area of only seven to eight thousand acres and is only grown to any extent in Hyderabad and Hala.

Wheat.—Wheat cultivation is important in the Tando Bago taluka which alone occupies over forty per cent. of the total area (thirty-five thousand acres) under the crop. Wheat is also grown to a fair extent in all the other talukas except Tando Allahyar where its cultivation is insignificant, the area being within two hundred acres.

Jambho.—*Jambho*, which is cultivated to an extent of about forty thousand acres, is mostly grown in the south of the district, the three southern talukas of Badin, Tando Bago and Guni claiming nearly eighty-five per cent. of the total area under the crop. Some *jambho* is also grown in Dero Mohbat but the cultivation in the other talukas is insignificant.

CATTLE

There are nearly four lakhs of cattle in the district, of which roughly one-fourth are oxen for ploughs, slightly less than one-half milch-cattle and about one-fourth young stock. Cows are double the she-buffaloes in number. Sheep and goats together number about one and a half lakh. Donkeys and camels number about twenty-five to thirty thousand each, and horses and ponies nearly twenty thousand. Camels and bullocks are used for draught and in turning water-wheels for the irrigation of the land.

FORESTS

Forests cover an area of one hundred and forty-one square miles. They are the most valuable in Sind and contain a high percentage of first class *babul*. There is a large local trade both in fuel and charcoal and large quantities are also transported to Karachi and thence exported to Arabia, Mesopotamia and Persia. The forests provide labour for a large number of persons, particularly at those seasons of the year when their services are not required on agricultural works.

IRRIGATION

Almost all the canals in the Hyderabad district, except the Fuleli, issue from the Indus in Sakrand and Hala talukas. All these canals were in existence before the annexation of the Province by the British but they have been since greatly improved. They are all purely inundation canals flowing from the end of May till October. The main canals are Gharo Mahmudo, Sarfraz, Nasir, Fuleli and Hassanali.

Gharo Mahmudo.—Formerly there existed a side or subsidiary channel of the Indus taking off near Saidabad which was called Gharo Wado. Subsequently, however, the river cut this Gharo and destroyed its continuity dividing it up in three portions, now called Gharo Rano (the northernmost), Gharo Bhanote and Gharo Mahmudo. As the last is the most important portion the whole system is called after it.

(1) *Gharo Rano* passes mostly through the forest and generally overflows its banks. It is eight miles and a half in length and has a number of branches.

(2) *Gharo Bhanote* is the middle section of the old Gharo Wado and passes wholly through Government forest and is four miles in length and has two branches.

(3) *Gharo Mahmudo* itself is sixteen miles long and takes off from a river *dhand* about six miles from Hala. The length of its branches is sixty-three miles. One of its branches, *viz.*, Sangro Wah, crosses the Jamrao West Branch by a syphon.

This system irrigates portions of the Hala, Shahdadpur, Tando Allahyar and Mirpurkhas talukas, and the cultivation is chiefly *bajri* and cotton.

Sarfraz.—This system has since 1905 been getting its supply from the same *dhand* which feeds the Nasir. Now it takes off direct from the river just near Nasir. On account of the construction of the Jamrao canal the tail portion

of the Sarfraz was cut off and a diversion twelve miles long with a regulator at its tail was constructed in 1900. The total length of the canal is seventy-nine miles and that of its branches is thirty-one and a half miles. It irrigates lands in the Hala, Hyderabad, Tando Allahyar, Dero Mohbat and Tando Bago talukas.

Nasir.—This canal takes off the Indus and owing to the changes in the river near its head, it has been given different mouths from time to time. Its length is twenty-seven miles and that of its branches one hundred and four miles. The lands irrigated are situated in Hala, Tando Allahyar and Dero Mohbat talukas.

Fuleli Canal.—It is the largest and most important canal in this district. It is a perennial canal with a width of about one hundred and twenty-five feet, with a full supply discharge of twelve thousand cubic feet per second. The canal is navigable for country craft and steam launches throughout the year. The Fuleli is eighty-one miles in length and has 763 miles of branches. The chief crops grown on the canal are rice, *bajri* and cotton.

Hassanali Canal.—It was originally a comparatively small canal but was entirely remade in 1903. It now runs in a straight line from the old mouth near Katiar in Guni taluka to Gaja Wah, a branch of the Fuleli. The total length of the main canal is thirty-two miles and that of its branches is sixty miles. The canal has a maximum discharging capacity of nine hundred cubic feet per second. The principal crops grown on it are rice and *bajri*.

Embankments.—The chief embankments in this district are Ghallian Bund, Jamshora Bund, Gidu Bundar Bund, Malh Bund and Hajipur Bund, and their total length is about forty-eight miles.

The whole district depends for its cultivation on the Indus and several canals taking off it. In the Hyderabad taluka, the land is for the most part high and about seventy per cent. of the cultivation is on lift and the remainder on flow. This is mostly a flat taluka, its appearance being somewhat diversified by the Ganjo Takar range of hills. The portion bordering the Indus is covered with forests. The level portion of the taluka is traversed by the Fuleli, Imam Wah, Khokhar and other canals. In the Hala taluka the general level of the land is very high and eighty per cent. of the cultivation is on lift. It is irrigated by the Marakh, Gharo, Mahmudo, the Sarfraz and other canals. Tando Allahyar is a uniformly high plateau and the land is therefore cultivated almost entirely by lift, ninety-six per cent. of the cultivation being by this method. The chief canals are the Ghalu, Sangro and Sarfraz. The remaining four talukas of Guni, Dero Mohbat, Tando Bago and Badin are all irrigated by the Fuleli canal and its branches. Guni is almost a level plain and eighty per cent. of the cultivation is by flow. Tando Bago is a vast alluvial plain and being generally low-lying, practically all the cultivation is on flow. Dero Mohbat is generally on a higher level than the adjoining talukas of Guni and Tando Bago. The surface is also uneven. The cultivation is hence both by flow and lift, the area under both being practically the same. The whole taluka of Badin is nothing but a rice growing swamp, impregnated with natural salts. It is on a lower level than Tando Bago and almost the whole cultivation is on flow.

DRINKING WATER SUPPLY

Drinking water is available everywhere in the district from wells or canals.

INDUSTRIES

The manufactures of the district, once famous, are in a state of decline. The Hyderabad taluka still enjoys much of its old pre-eminence for lacquered work. In the Hala sub-division the special features of the local industries are striped and brilliant cloths known as *susis* and *khes*, and also glazed pottery. The latter work is turned to various ornamental purposes especially tiling, and is remarkable for excellence of both glaze and colour. In nearly all parts of the district some industry is carried on, though hardly on a commercial scale; blankets, coarse cotton cloth, camel saddles, rugs, felt and metal work being perhaps the commonest products. There are about twenty factories in the district, more than half of which are at Hyderabad on the banks of Fuleli. They are for cotton-ginning, cotton-pressing and rice-husking.

COMMUNICATIONS

The North-Western Railway runs through the district from Kotri to Uderolal on the main line to Lahore, with a branch line from Hyderabad to Badin. This branch line was dismantled in the year 1917 owing to military exigencies but was relaid in 1921-22. The Jodhpur-Bikaner meter-gauge line from Marwar junction also has its terminus at Hyderabad; this is a section of the land route from Quetta and Karachi to Bombay.

Roads are numerous, but except those within a radius of about five miles from Hyderabad, are all unmetalled. As a whole, their condition at any time is bad, while during the inundation they are frequently intersected by unauthorised water-courses or flooded by water from adjoining fields and thus become impassable for weeks together to traffic of any kind. Heavy rainfall produces the same result. Three trunk roads radiate from Hyderabad, leading to Rohri *via* Hala, Mirpurkhas *via* Tando Allahyar, and Badin *via* Tando Muhammad Khan. Recently, a portion of a road from Oderolal station to Hala was metalled. Some local-fund roads were also constructed particularly in Badin and Dero Mohbat talukas but they are not important enough to need special mention by name.

ECONOMIC CONDITION

The economic condition of the people is not different from that of the rest of Sind, where considerable uniformity of conditions of life prevails. The *zamindar* class is not so rich as the great land-owners of Upper Sind, but as a whole they are better off than those of Karachi or Thar-Parkar. The cultivator lives an easy and indolent life, and is permanently indebted to the village *baniya*. This only means that he has no use for money and never carries it, not that he is deprived of sufficient food and clothing or of the amenities to which he is accustomed. The number of *bania zamindars* is constantly increasing, and is restrained only by the system of restricted tenure which is now imposed on all land given or restored after forfeiture to Mahomedans, and by the Incumbered Estates Act. As a rule, the *bania zamindar* is a model of industrious and thrifty agriculture, but his monetary dealings with his neighbours are extortionate and relentless.

POPULATION

The population of the district according to the census of 1921 is 573,450, of whom 411,776 are Mahomedans, 160,211 Hindus, and 1,054 Christians. Other religious sects are numerically insignificant. The relatively large number of Christians is due to the presence of a cantonment at Hyderabad.

LANGUAGES

Sindhi or kindred dialects are spoken by 516,205 persons; other prevailing languages are Rajasthani (19,975), Gujarathi (14,677) and Balochi (10,576).

OCCUPATION

Cultivation forms the livelihood of the great majority of the population, and is shown in the census tables as the occupation of 324,272 persons. Most (287,628) of these are cultivators on annual tenancy, who share the produce with the owners of the land in proportions fixed by long custom and seldom disputed; nearly all the remainder are land-owners, a large number of whom cultivate their own holdings. Agriculturists as a rule breed and graze their own cattle; but there are upwards of 14,000 stock breeders and herdsmen without other occupation, while in years of scanty rainfall thousands of cattle are brought from the desert for pasture. The *pala* fish of the district is well-known for its delicate flavour, and fishing is the occupation of 3,577; the fishers as a rule are poor and exploited by contractors, but they have enough for their needs and are independent of bad seasons; 13,180 persons are engaged in the textile trade of whom 3,174 are dyers and 7,560 weavers; the demand for home-spun cloth has given some stimulus to this industry. Minor industries such as pottery, carpentry, leatherwork, jewellery, provide employment for a few thousand persons each, but demand no special comment. There are some eleven thousand textile and piece-goods merchants; these are on the whole a wealthy class. Village shopkeepers (nearly all Hindus) number twenty-two thousand. About ten thousand persons are in Government or Municipal service; these come mainly from Hyderabad city and the village of Nasarpur near Tando Allahyar. Professions and the Liberal Arts (chiefly law, education and medicine) account for 8,594 persons, and 23,431 are in domestic service of various kinds.

FAMINE

There has been no famine in the district for twenty years. **1911-12, 1915-16** and **1918-19** were years of scarcity but in the first two years no relief works were required. In 1918-19 Local Boards undertook a number of petty works with the object of providing employment for those in need; but there was no general eagerness to embrace the opportunity thus given, nor was there any appreciable emigration from the district in search of labour elsewhere. On the contrary the *zamindars* and cultivators made large sums from the high prices of food-stuffs prevailing. The area under cultivation fell, but there were no suspensions or unusual remissions of land revenue; *takavi* was freely advanced, control of prices and of transport of grain was introduced by Government, and rice was imported from Burma and wheat from Australia and the Punjab. These measures sufficed to meet the situation and with the advent of the Barrage and its canals it is unlikely that anything approaching famine will again threaten this district.

HYDERABAD STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluks.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Population (1921). Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Not available for cultivation. Total.
		No.	Acs.	No.	Acs.	No.	Acs.	No.	No.	Rs.	No.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Hyderabad ..	81	350	4	35	85	385	151,376	394	2,43,189	85	246,566	100	68,802	..	67,752	136,554	25,585	16,207	68,217	110,012
2	Hala ..	111	433	7	87	118	520	95,577	187	2,12,831	118	452,319	100	85,550	..	115,738	201,288	54,912	45,870	47,249	251,031
3	Tando Alahyar	90	577	1	18	91	595	54,211	91	1,22,896	91	261,360	100	52,537	..	139,348	191,763	35,666	290	33,619	69,575
4	Dero Mohbat.	109	462	7	36	116	498	40,238	81	1,59,327	116	318,934	100	52,696	..	93,479	148,175	117,229	..	55,330	129,259
5	Tando Bago..	121	590	12	61	139	651	63,033	97	2,82,788	139	416,486	100	100,503	..	93,395	193,798	195,440	..	27,247	222,687
6	Badin ..	172	771	2	21	174	792	81,540	103	3,95,935	174	506,620	100	132,134	..	73,976	196,110	145,941	..	96,369	310,510
7	Guni ..	170	808	35	179	205	987	87,475	89	3,08,669	205	631,660	100	115,783	..	166,622	282,405	183,899	5,489	159,867	349,255
	Total ..	860	3,981	68	437	928	4,418	573,450	130	17,80,345	928	2,833,945	100	598,006	..	752,110	1,350,116	956,675	70,856	456,298	1,483,829

No.	Taluks.	Area uncultivated. Total.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Total.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Hyderabad ..	110,012	68,566	..	..	..	236	68,802	3,553	4,313	125	2,863	32,715	30	1,108	46	4,414	15,238	6,765	71,176	2,366	68,802
2	Hala ..	251,031	79,583	..	..	..	5,967	85,550	1,296	2,758	..	2,099	39,876	40	2,664	31	5,143	19,808	16,564	86,613	1,063	85,550
3	Tando Alahyar	69,575	52,598	..	..	..	939	52,537	214	185	..	1,361	13,100	40	88	..	1,100	3,133	3,616	52,863	330	52,537
4	Dero Mohbat.	129,259	52,679	..	..	..	17	52,696	13,771	5,243	40	664	22,099	7	381	111	752	5,362	5,380	53,726	1,024	52,696
5	Tando Bago..	222,687	100,499	..	..	..	4	100,503	64,188	10,499	126	695	5,106	52	112	145	613	1,035	12,632	101,153	650	100,503
6	Badin ..	310,510	22,133	..	..	..	1	22,134	91,392	5,128	2,311	190	483	25	935	200	480	23,122	159	122,735	601	122,134
7	Guni ..	349,255	114,314	..	..	..	1,469	115,783	78,049	2,266	202	296	21,151	7	2,182	443	951	2,500	11,434	119,983	4,200	115,783
	Total ..	1,483,829	490,282	..	..	..	17,722	598,005	252,433	36,392	2,807	8,679	154,440	161	6,870	948	9,862	57,099	78,550	608,241	10,236	598,005

Cultivated and Uncultivated Area, 1918-19.

No.	Taluks.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Population (1911). Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Not available for cultivation. Total.
		No.	Acs.	No.	Acs.	No.	Acs.	No.	No.	Rs.	No.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Hyderabad ..	81	350	4	35	85	385	148,457	387	1,75,727	85	246,634	100	57,643	92	178,784	136,519	24,074	17,442	68,599	110,115
2	Hala ..	111	433	7	87	118	520	105,957	206	1,48,901	118	332,918	100	72,830	1,770	131,289	205,899	33,376	47,225	47,429	127,029
3	Tando Alahyar	90	577	1	18	91	595	66,409	112	1,31,632	91	380,610	100	50,631	..	145,691	196,322	150,112	290	33,581	184,288
4	Dero Mohbat.	109	462	7	36	116	498	49,087	99	1,12,898	116	318,954	100	42,720	..	112,875	155,595	105,962	..	57,392	163,354
5	Tando Bago..	122	590	12	61	139	651	67,678	104	2,01,634	139	416,478	100	86,723	..	87,072	173,795	194,619	..	26,216	220,835
6	Badin ..	169	771	2	21	171	792	83,685	106	3,39,176	171	506,595	100	110,861	2	81,583	192,446	195,449	251,008	60,138	311,146
7	Guni ..	170	808	35	179	205	987	91,366	93	2,31,447	205	631,613	100	101,045	83	180,317	281,445	181,122	5,490	163,556	350,168
	Total ..	852	3,991	68	437	925	4,428	612,039	139	13,41,490	925	2,833,799	100	525,453	1,958	838,462	1,365,878	940,364	70,447	457,210	1,467,921

No.	Taluks.	Area uncultivated. Total.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Total.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	A.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Hyderabad ..	110,115	55,946	623	4	113	56,688	2,095	..	61	2,224	26,610	26	159	31	3,576	17,272	5,631	57,685	997	56,688
2	Hala ..	127,029	73,699	..	..	101	73,800	1,822	..	4	1,840	32,333	30	..	..	71,347	19,939	17,369	73,864	64	73,800
3	Tando Alahyar	184,288	50,387	..	..	24	50,411	151	..	..	569	29,023	51	25	..	635	18,789	2,067	50,684	73	50,611
4	Dero Mohbat.	163,359	42,700	..	..	15	42,720	13,015	2,277	22	594	15,098	2	169	97	9660	9,514	2,255	43,873	1,153	42,720
5	Tando Bago..	221,876	83,723	..	..	13	86,736	63,264	5,644	235	2,793	3,171	91	238	184	596	2,619	10,583	89	184,248	448	86,736
6	Badin ..	311,146	113,861	85	678	1,263	1,849	1,877	640	114	434	268	1,118	..	610	22,329	115,731	1,870	113,461	601	122,134
7	Guni ..	350,168	100,492	609	..	2	25	101,128	65,908	801	397	621	18,538	1	1,392	351	1,187	5,505	8,566	109,261	2,133	101,128
	Total ..	1,467,921	524,003	1,232	..	145	525,544	131,113	9,803	2,558	10,428	125,373	238	2,427	938	104,919	73,199	68,794	534,282	8,738	525,544

Crops, 1922-23.

No.	Taluks.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Urdd.	Lanz.	Others.	Total.	Orchard and Garden Produce. Vegetable.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesame.	Linseed.	Rape and Mustard.	Niger-seed.	Jambhe.	Others.	Total.	Fibres. Dyes.	Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped.	Remainder not cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Hyderabad ..	2,863	32,715	3,553	4,313	..	155	43,599	..	39	11	..	1,058	1,108	2,280	..	206	1,928	4,414	295	..	295	38	..	46	178	..	61	..	1,313	..	1,552	..	15,238	..	15,238	4,880	71,170	2,366	68,802
2	Hala ..	2,099	39,876	1,296	2,758	7	2	46,038	..	2	225	..	2,429	2,656	870	30	642	1,542	1,903	..	..	1,903	69	54	3	263	..	298	..	965	..	1,526	..	19,807	13	19,820	13,956	86,613	1,063	85,550
3	Tando Alahyar	1,361	13,100	214	185	54	43	14,955	..	15	7	..	172	194	1,021	..	87	1,109	1,208	..	..	1,208	63	..	..	691	..	18	..	671	..	1,380	..	13,152	495	13,177	1,340	52,867	330	52,537
4	Dero Mohbat.	664	22,099	13,771	5,243	1	47	41,795	..	7	..	..	373	380	421	..	331	752	405	..	..	405	62	..	111	905	..	71	..	3,096	..	4,072	..	3,362	30	5,392	811	53,720	1,024	52,696
5	Tando Bago..	696	5,106	64,188	10,499	..	..	80,489	..	178	..	..	89	267	277	..	112	389	613	105	..	718	64	..	143	65	..	33	..	10,349	..	10,441	..	1,035	13	1,048	2,017	101,152	649	100,503
6	Badin ..	190	483	91,392	5,128	..	2,236	99,539	..	112	2	..	229	343	256	..	65	321	488	..	..	488	26	..	200	245	..	23	..	16,995	..	17,468	..	4,753	25	4,778	1,610	122,134	601	122,134
7	Guni ..	296	21,151	78,049	2,266	..	209	102,473	..	71	4	..	2,107	2,182	555	..	396	951	332	..	..	332	40	..	443	464	..	279	..	6,835	..	7,578	5	2,500	7	2,507	3,472	119,983	4,200	115,783
	Total ..	8,680	154,440	252,433	36,392	62	2,968	454,975	..	265	249	..	6,293	6,807	5,682	337	3,842	9,861	2,816	..	..	2,818	489	54	948	3,024	..	1,663	..	40,218	..	44,505	5	57,097	160	57,197	30,235	608,240	10,235	598,005

Crops, 1918-19.

No.	Taluks.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse grains (mainly barley).	Others.	Total.	Pulses. Tur.	Gram.	Mug and Urdd.	Lanz.	Others.	Total.	Orchard and Garden Produce. Vegetable.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesame.	Linseed.	Rape and mustard.	Niger-seed.	Jambhe.	Others.	Total.	Fibres. Dyes.	Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped.	Remainder not cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Hyderabad ..	2,224	26,610	2,095	1,042	87	3	32,066	..	..	12	..	144	156	1,474	35	2,640	3,549	299	..	..	299	27	31	176	..	..	5	..	456	..	637	..	17,272	83	17,355	4,642	58,732	997	57,735
2	Hala ..	1,840	32,513	1,022	1,947	7	3	37,153	..	18	1	..	1,759	1,778	640	..	579	1,219	967	..	..	967	61	7	64	..	154	..	..	247	..	465	..	19,939	16	19,955	13,441	75,045	445	74,600
3	Tando Alahyar	969	29,023	151	44	..	2	29,789	..	14	3	..	6	24	538	12	87	637	243	..	..	243	10	..	596	..	54	..	..	80	..	730	..	18,189	17	18,206	1,064	50,703	72	50,631
4	Dero Mohbat.	594	15,098	13,015	2,277	24	2	30,880	..	..	6	..	167	173	314	..	332	646	139	..	13	152	67	..	301	..	11	..	1	1,312	..	1,624	..	9,514	7	9,521	786	43,875	1,153	42,720
5	Tando Bago..	2,793	3,171	63,245	5,444	318	4	74,973	..	33	..	..	208	241	174	93	327	594	112	..	86	198	193	..	107	..	12	..	..	7,458	..	7,569	..	2,617	2	2,619	2,864	86,129	2,448	86,231
6	Badin ..	1,877	640	83,678	1,263	1,963	13	91,434	..	2	..	..	368	426	714	1,543	204	2,461	28	..	26	180	268	15	15	..	205	..	..	16,791	15	16,991	..	182	..	182	1,788	115,756	1,670	113,866
7	Guni ..	621	18,538	65,908	801	398	..	86,266	..	18	58	..	1,316	1,392	708	..	412	1,120	207	..	..	207	66	351	193	..	25	..	..	5,483	..	5,926	8	5,505	4	5,509	2,416	103,261	2,133	101,128
	Total ..	10,428	125,373	231,114	12,823	2,796	26	382,560	..	52	166	..	3,963	4,184	4,562	1,623	3,981	10,166	1,963	..	1,963	443	937	1,452	..	691	..	31,799	..	33,942	8,873	195	130	73,325	29,001	536,529	9,118	527,411

Agricultural Stock, 1919-20.

No.	Taluks.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Hyderabad ..	14,727	29	191	48	651	7	12,810	5,652	11,970	2,761	48,826	2,198	3,060	29,514	4,608	5,057	4,646	530	1	631	9·3
2	Hala ..	17,496	1	331	9	451	2	15,731	7,467	12,822	3,174	57,443	2,055	4,295	33,213	3,427	5,682	5,803	5	6	551	9·8
3	Tando Alahyar	13,797	..	95	19	3	..	9,692	2,269	7,697	1,177	34,743	1,510	646	25,176	3,526	5,546	4,532	829	29	14	7·6
4	Dero Mohbat.	10,109	61	19	68	3	..	8,720	3,591	4,766	1,036	28,349	1,179	4,193	16,531	2,028	3,989	3,975	35	..	31	10·3
5	Tando Bago..	10,433	336	37	29	10	..	11,913	7,710	4,103	2,324	36,928	1,673	4,956	12,394	1,848	280	5,403	..	4	142	11·9
6	Badin ..	13,784	7	130	142	115	6	13,523	5,211	7,221	4,224	3,256	49,116	1,519	4,993	6,213	3,685	3,792	7,271	1,233	8	23·8
7	Guni ..	17,295	4	168	162	112	..	18,499	15,320	7,964	4,908	64,454	2,530	4,855	18,463	2,675	5,258	10,115	18	23	246	13·3
	Total ..	97,771	440	971	481	1,345	46	92,886	53,710	53,546	18,636	319,834	12,664	26,998	140,504	21,797	29,496	36,347	8,153	40	1,365	12·4

Agricultural Stock, 1915-16.

No.	Taluks.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch Cattle. Cows.	Milch Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For Passengers.	Carts. For Produce and Goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Hyderabad ..	14,709	18	188	22	989	167	11,288	5,779	9,556	3,653	46,348	1,639	3,200	16,694	3,476	4,584	5,596	89	5	233	9·2
2	Hala ..	18,578	75	154	68	76	..	14,478	6,736	14,059	4,168	58,392	2,383	2,552	30,285	4,121	5,541	6,413	141	..	15	9·3
3	Tando Alahyar	14,146	..	14	133	..	..	10,617	2,958	9,678	2,081	39,647	1,873	752	19,161	3,354	4,316	5,187	2	..	21	9·6
4	Dero Mohbat.	10,691	..	58	29	30	..	8,858	3,808	6,054	2,514	31,272	1,155	4,421	17,556	2,261	2,305	3,775	128	..	52	11·9
5	Tando Bago..	13,811	4	142	119	338	2	18,499	12,707	9,169	6,240	61,231	2,080	7,174	13,893	2,508	1,887	4,081	1,630	4	179	18·2
6	Badin ..	17,916	1	104	132	352	4	21,653	7,177	15,912	10,096	85,322	2,446	9,405	8,201	3,901	2,931	8,342	..	..	346	14·2
7	Guni ..	18,126	24	118	110	347	56	22,429	16,135	12,745	8,230	78,320	2,535	4,964	24,435	5,345	4,966	8,255	15	1	260	13·1
	Total ..	107,976	122	815	494	2,445	229	111,802	65,301	74,171	36,678	400,031	16,011	32,468	130,225	29,958	26,520	41,476	2,005	10	1,087	11·6

HYDERABAD STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluks.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Hyderabad ..	48	..	..	212	..	..	..	7	7	166	134	..	..	195	..	..	9
2	Hala ..	34	..	..	224	..	..	..	..	..	211	404	..	..	9	..	..	..
3	Tando Allahyar ..	36	..	..	205	..	..	..	69	69	325	136	2	14	20	..	..	28
4	Dero Mohbat ..	29	..	..	..	..	..	..	3	3	85	55	..	..	14	..	..	3
5	Tando Bago ..	21	..	..	1	..	..	..	12	12	40	18	..	..	..	..	..	..
6	Badin ..	21	..	..	..	..	..	..	..	..	40	..	..	..	3	..	..	3
7	Gani ..	43	..	..	7	..	..	1	181	182	219	..	..	..	25	..	..	..
	Total ..	231	..	..	649	..	..	1	319	320	945	747	2	14	277	Details not available.		

Government Protective Irrigation Works, 1922-23.

No.	Name of work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif	Rabi.	Total
			Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Jamrao Canal ..	Figures not available for this Civil District.	3,566	15	15	15	15	15
2	Alibhar Kacheri ..		12,165	1,708	1,708	1,588	125	1,713
3	Great Marak ..		33,602	9,082	9,082	7,652	1,495	9,147
4	Charo Mahmudo ..		101,689	49,092	49,092	39,155	10,802	49,957
5	Surfraz ..		110,424	26,723	26,723	24,070	2,844	26,914
6	Kari Shumali ..		220,445	32,456	32,456	29,830	2,739	32,569
7	Nasir Wah ..		123,566	31,782	31,782	28,431	3,626	32,057
8	Other Canals ..		122	78	78	39	43	78
9	Fuleli Canal ..		1,527,574	403,577	403,577	318,899	91,750	410,649
10	Hassali Canal ..		27,420	17,403	17,403	16,257	1,252	17,509
11	Other Canals ..		76,696	21,863	21,863	19,768	3,682	23,450
	Total ..		2,289,319	593,779	593,779	485,685	118,373	604,058

Holdings, 1921-22.

No.	Taluks.	Number of Holdings. Under and up to 5 acres	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Hyderabad ..	412	418	2,240	422	20	3,512	113,501	32·3	59 10	3 4 5
2	Hala ..	430	1,496	693	272	33	2,884	145,350	50·4	68 6 7	1 5 1
3	Tando Allahyar ..	453	1,981	1,210	402	18	4,063	180,453	44·4	36 8 9	0 13 11
4	Dero Mohbat ..	4	1,429	715	239	24	2,411	125,233	51·9	55 8 5	1 1 1
5	Tando Bago ..	513	787	527	307	42	2,164	154,667	71·4	118 15 6	1 10 5
6	Badin ..	714	1,961	1,016	405	20	4,116	180,785	43·9	91 1 9	2 2 11
7	Gani ..	59	696	460	336	65	1,616	167,609	103·7	170 4 2	1 10 4
	Total ..	2,582	8,728	6,861	2,373	222	20,766	1,067,538	50·6	85 12 5	1 9 1

Incidence of Assessment, 1920-21.

No.	Taluks.	Fully assessed Area. Area.	Assessment.	Incidence per acre	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per head of population including alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Hyderabad ..	63,851	2,09,311	3 4 6	151,376	1 6 3
2	Hala ..	77,445	1,95,302	2 8 9	95,577	2 0 8
3	Tando Allahyar ..	65,501	1,48,415	2 4 3	54,211	2 11 10
4	Dero Mohbat ..	57,567	1,33,848	2 5 2	40,238	3 5 3
5	Tando Bago ..	89,027	2,57,452	2 14 3	63,033	4 1 4
6	Badin ..	120,393	3,74,999	3 1 8	81,540	4 9 7
7	Gani ..	89,459	2,75,141	3 1 3	87,475	3 2 3
	Total ..	563,288	15,94,468	2 12 5	573,450	2 15 6

Government Protective Irrigation Works, 1918-19.

No.	Name of work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif	Rabi.	Total.
			Acs.		Acs.	Acs.	Acs.	Acs.
1	Jamrao Canal ..	Figures not available for this Civil District.	2,247	Figures not available for the Civil District.	16,300	1,330	3	1,333
2	Alibhar Kacheri ..		76,730		58,350	5,691	554	6,245
3	Great Marak ..		270,700		68,200	37,196	8,093	45,492
4	Charo Mahmudo ..		139,400		40,800	19,252	1,643	20,895
5	Surfraz ..		185,500		43,900	31,683	2,119	33,802
6	Kari Shumali ..		127,300		30,250	23,040	2,932	25,972
7	Nasir Wah ..		330		10	10	25	44
8	Other Canals ..							
9	Fuleli Canal ..	1,497,500			400,000	298,780	62,668	361,448
10	Hassali Canal ..	84,000			30,000	16,087	1,274	17,361
11	Other Canals ..	95,900			35,000	14,518	1,999	16,517
	Total ..		2,419,807		723,900	447,803	82,310	530,113

*Included in Nawabshah District.

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Hyderabad ..	Maximum 1913	..	1·33	0·09	..	..	0·09	13·21	2·70	3·47	..	..	0·23	21·12
		Minimum 1899	..	..	0·40	..	..	..	..	..	..	..	..	..	0·40
		Average	0·21	0·28	0·20	0·06	0·16	0·44	3·06	2·06	0·65	0·01	0·07	0·05	7·26
		Rainfall for 1922-23	0·02	0·43	..	..	..	..	0·32	2·05	..	..	..	..	2·82
2	Hala ..	Maximum 1913	..	1·27	0·24	..	..	0·15	12·45	0·93	2·10	..	..	0·66	18·30
		Minimum 1918	..	..	..	..	..	..	..	0·18	..	..	..	0·66	0·84
		Average	0·12	0·29	0·30	0·09	0·33	0·41	2·17	2·36	0·57	0·01	0·02	0·09	6·91
		Rainfall for 1922-23	0·23	0·03	..	..	0·40	..	0·50	2·62	..	..	..	..	3·78
3	Tando Allahyar ..	Maximum 1908	0·66	..	..	..	..	..	19·71	4·66	..	..	..	..	25·03
		Minimum 1899	..	0·10	..	..	0·03	..	0·20	..	..	..	..	..	0·13
		Average	0·08	0·11	0·04	0·12	0·45	0·38	0·70	2·59	0·54	0·03	..	0·06	5·10
		Rainfall for 1922-23	..	0·40	..	..	0·55	..	0·37	1·64	0·10	..	..	..	3·06
4	Dero Mohbat ..	Maximum 1913	..	0·18	0·20	..	..	0·06	10·11	2·87	8·59	..	..	0·15	22·16
		Minimum 1899	..	..	0·25	..	0·20	..	..	..	..	..	..	..	0·45
		Average	0·14	0·20	0·06	0·02	0·24	0·32	1·79	3·03	0·71	0·06	..	0·12	6·66
		Rainfall for 1922-23	0·05	0·45	..	..	..	..	0·05	1·90	..	..	..	..	2·05
5	Tando Bago ..	Maximum 1913	..	0·05	0·28	..	..	0·45	14·93	4·15	5·07	..	0·06	0·13	25·12
		Minimum 1899	..	..	0·08	..	..	..	..	..	..	..	..	..	0·08
		Average	0·07	0·15	0·17	0·01	0·20	0·22	2·58	2·74	1·40	1·08	0·10	0·01	8·03
		Rainfall for 1922-23	..	0·35	..	..	..	..	0·30	1·47	0·13	..	..	..	2·25
6	Badin ..	Maximum 1913	..	..	0·01	0·39	..	1·66	22·28	8·56	6·62	..	0·02	0·09	39·03
		Minimum 1899	..	..	0·14	0·01	..	..	..	..	..	..	..	..	0·29
		Average	0·04	0·13	0·07	0·03	0·59	0·64	2·29	3·76	1·71	0·14	0·15	..	9·35
		Rainfall for 1922-23	..	0·09	..	..	..	..	0·17	1·36	..	..	..	..	1·62
7	Gani ..	Maximum 1908	0·60	..	..	..	..	..	14·72	4·35	..	..	..	..	19·67
		Minimum 1899	..	..	0·12	..	..	..	..	..	..	..	..	..	0·12
		Average	0·12	0·19	0·10	..	0·27	0·56	2·59	2·76	0·92	0·20	..	0·05	7·76
		Rainfall for 1922-23	..	0·74	..	..	..	..	0·20	3·00	0·10	..	..	..	4·04

Temperature Details (Hyderabad).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913.	Mean maximum	79	78	88	103	106	106	97	92	93	96	88	76
	Mean minimum	51	54	60	72	79	83	80	78	74	70	59	55
	Absolute maximum	86	90	100	109	112	118	110	96	101	100	96	84
	,, minimum	42	44	51	66	74	77	73	71	71	64	52	44
1914.	Mean maximum	78	76	89	100	110	103	96	95	97	96	87	76
	Mean minimum	53	61	71	79	82	82	79	79	79	71	66	51
	Absolute maximum	86	84	102	115	118	109	105	100	105	101	95	89
	,, minimum	30	45	48	61	76	79	77	76	75	65	59	44
1915.	Mean maximum	76	79	93	97	105	106	101	96	100	98	90	78
	Mean minimum	50	53	64	70	78	82	82	79	77	73	60	52
	Absolute maximum	86	88	106	110	112	115	107	103	107	103	79	87
	,, minimum	42	42	52	61	71	79	75	76	73	66	52	45
1916.	Mean maximum	79	79	97	100	106	105	99	93	95	94	84	78
	Mean minimum	53	52	64	72	77	82	81	80	77	71	55	50
	Absolute maximum	84	89	104	108	110	105	102	102	102	101	92	84
	,, minimum	46	36	56	68	62	77	78	75	75	58	45	44
1917.	Mean maximum	83	85	90	98	100	104	100	93	93	94	84	76
	Mean minimum	56	62	70	76	83	82	79	77	78	76	56	50
	Absolute maximum	97	99	97	105	107	110	108	101	97	98	90	85
	,, minimum	49	48	52	61	69	80	80	73	75	58	49	43
1918.	Mean maximum	75	83	99	98	104	101	99	97	96	99	88	77
	Mean minimum	48	55	63	68	78	80	78	74	68	68	59	50
	Absolute maximum	81	92	102	110	114	102	104	104	104	106	97	82
	,, minimum	41	39	50	54	74	79	79	79	79	62	52	42
1919.	Mean maximum	73	83	91	100	106	103	98	95	96	98	87	76
	Mean minimum	50	55	69	72	79	81	81	80	74	68	59	51
	Absolute maximum	79	93	97	108	115	108	105	102	106	104	94	87
	,, minimum	40	44	54	66	75	78	74	76	70	59	51	44
1920.	Mean maximum	76	80	94	100	105	105	99	95	97	101	89	77
	Mean minimum	50	54	65	70	77	83	82	78	77	70	62	47
	Absolute maximum	82	96	106	108	113	112	107	100	103	109	98	84
	,, minimum	45	37	52	57	69	77	79	75	73	64	55	39
1921.	Mean maximum	77	85	98	105	107	105	99	92	95	95	88	76
	Mean minimum	50	52	64	72	78	82	82	79	78	70	62	55
	Absolute maximum	84	97	108	111	114	116	106	101	102	102	94	83
	,, minimum	42	45	58	64	71	79	77	75	70	61	56	49
1922.	Mean maximum	74	81	94	104	106	102	101	96	97	96	89	80
	Mean minimum	51	54	64	72	77	82	83	79	77	69	58	53
	Absolute maximum	84	88	101	110	116	105	107	102	103	101	92	89
	,, minimum	41	48	50	66	66	78	80	76	72	62	51	44

Prices—Pre-war Normal.

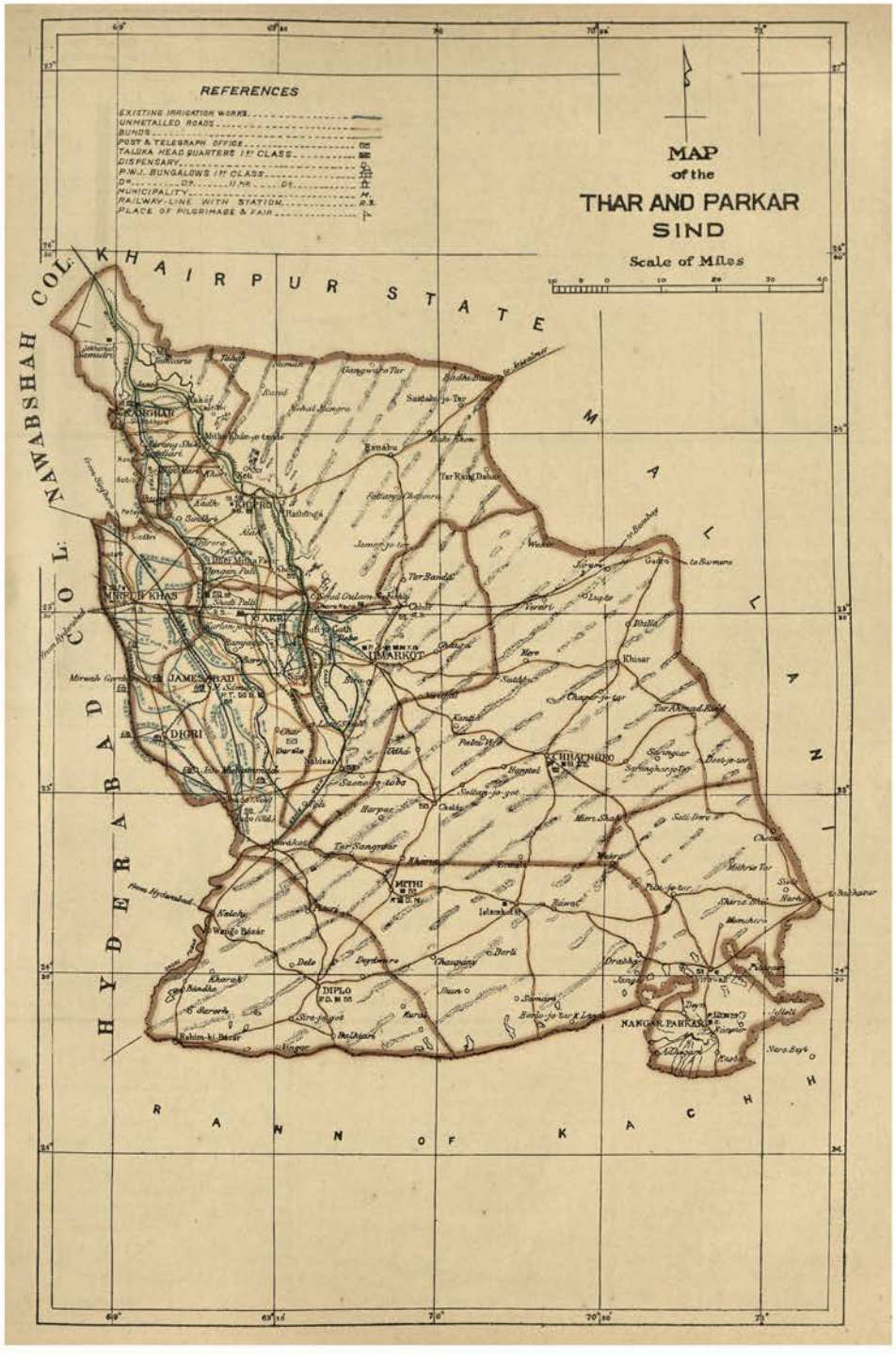
No.	Taluka.	Price in lbs. per Rupee. Jowari	Bajri.	Rice.	Mug.	Jowari-Kadki.	Dry Grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Hyderabad ..	25	24	14	23	..	..	1 6 5	0 9 2	0 9 2
	Non-headquarter towns.									
2	Hala ..	32	28	23	17	..	..	0 13 5	0 6 2	0 7 10
3	Tando Allahyar ..	39	27	22	..	..	..	1 0 0	0 8 8	0 8 0
4	Dero Mohbat ..	20	22	23	..	160	..	1 0 0	0 8 0	0 8 0
5	Tando Bago ..	..	22	20	15	80	64	1 0 0	0 7 0	0 7 0
6	Badin ..	..	29	21	..	..	..	1 0 0	0 8 0	0 8 0
7	Gani ..	29	28	21	12	200	80	1 0 0	0 8 0	0 8 0
	Average of the non-headquarter towns..	30	26	22	15	132	107	1 1 1	0 7 5	0 7 8

Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Jowari	Bajri.	Rice.	Mug.	Jowari-Kadki.	Dry Grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Hyderabad ..	22	18	13	18	100	35	3 0 0	1 0 0	1 0 0
	Non-headquarter towns.									
2	Hala ..	16	16	9	8	..	..	1 8 0	0 12 0	1 0 0
3	Tando Allahyar ..	17	15	12	..	..	..	2 0 0	0 12 0	
4	Dero Mohbat ..	17	15	12	..	80	..	2 0 0	0 12 0	0 12 0
5	Tando Bago ..	..	13	12	..	50	79	2 0 0	0 12 0	0 12 0
6	Badin ..	..	23	26	..	..	..	2 0 0	0 12 0	0 12 0
7	Gani ..	29	26	21	30	200	80	1 8 0	0 8 0	0 8 0
	Average of the non-headquarter towns..	28	18	15	19	125	80	1 13 4	0 11 4	0 12 0

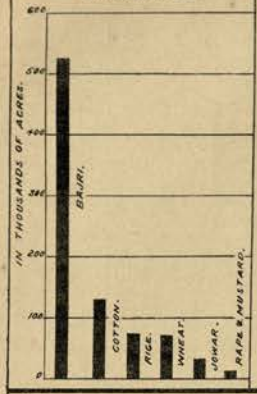
Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

Month.	1911-12. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.
April	..	..	..	..	..	..	No Famine Relief Works						No Famine Relief Works opened.					
May	..	..	..	..	..	..												
June	..	..	..	..	..	..												
July	..	..	..	..	..	..												
August	..	..	..	..	..	..												
September	..	..	..	..	..	..												
October	..	..	..	..	..	..												
November	..	..	..	..	..	..												
December	..	..	..	..	..	..												
January	..	..	..	..	..	..												
February	..	..	..	..	..	..												
March	..	..	..	..	..	..												


MAP
of the
THAR AND PARKAR
SIND
Scale of Miles
REFERENCES
EXISTING IRRIGATION WORKS
UNMETALLED ROADS
BUNDS
POST & TELEGRAPH OFFICE
TALUKA HEAD QUARTERS 1ST CLASS
DISPENSARY
P.W.I. BUNGALOWS 1ST CLASS
MUNICIPALITY
RAILWAY-LINE WITH STATION
PLACE OF PILGRIMAGE & FAIR
KHAIRPUR STATE
MALLANI
NAWABSHAH COL.
HYDERABAD COL.
RANN OF KACHH
NANGHAR
KHIPRO
MIRPUR KHAS
AKRI
UMARKOT
JAMESABAD
DIGRI
CHHACHHRO
MITHI
DIPLO
NANGAR PARKAR

THAR & PARKAR DISTRICT.

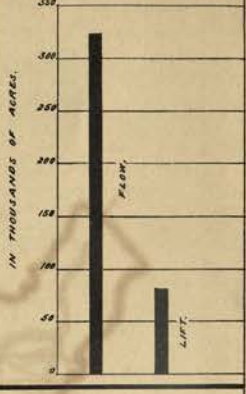
RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER IRRIGATION.

ONE DOT = 1000 ACRES.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



AREA UNDER CROPS.

BAJRI. ONE DOT = 1000 ACRES.

RICE. ONE DOT = 100 ACRES.

WHEAT. ONE DOT = 100 ACRES.

SESAMUM. ONE DOT = 10 ACRES.

JAMBHO. ONE DOT = 10 ACRES.

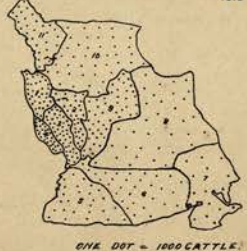
COTTON. ONE DOT = 100 ACRES.

NUMBER OF CATTLE.

1909-10

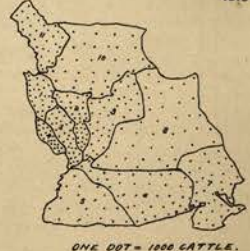
ONE DOT = 1000 CATTLE.

1915-16



ONE DOT = 1000 CATTLE.

1919-20



ONE DOT = 1000 CATTLE.

THAR PARKAR

POSITION AND AREA

The district of Thar and Parkar lies between 24° 13′ and 26° 21′ north latitude and 68° 40′ and 71° 11′ east longitude and has an area of 13,636 square miles. It is bounded on the north by the Territories of His Highness the Mir of Khairpur, on the east by the States of Jesalmir and Jodhpur, on the south by the Rann of Cutch and on the west by the Nawabsah and Hyderabad districts of Sind.

PHYSICAL FEATURES

It is divided into two main portions which are absolutely distinct from one another, the irrigated area of the west known as "Sind" or "Pat" and the desert area to the east, the "Thar". The latter constitutes a portion of the vast tract of country which embraces the Rajputana States and is often designated in maps as the Great Desert. The Eastern Nara is for a long distance the line of demarkation between the two regions and further south at Umarkot for example, the fusion of the two is clearly marked.

The irrigated area consists of Mirpurkhas, Jamesabad, Digri, Sanghar and Samaro talukas and the Khipro and Umarkot talukas (both exclusive of the desert portion), and has an area of about 3,413 square miles. The Desert portion is marked in the map by sand hills running from south-east to south-west. It includes the four talukas of Nagar Parkar, Chachro, Mitti and Diplo and the desert portion of the Umarkot and Khipro talukas and covers an area of 10,223 square miles.

The only hills in the district are at Nagar Parkar in the peninsula at the extreme south-east corner known as "Parkar" which is a small area of country quite different from the Desert. The tract is flat and level except close to Nagar Parkar itself. The principal range Karunjhar is twelve miles in length and attains a height of a thousand feet. Smaller hills rise in the east. They are covered with sparse jungle and pasturage and give rise to two perennial springs as well as to temporary streams after rain.

CLIMATE

The climate differs considerably in the two portions of the district. In the western (or irrigated) portion it is comparatively temperate but very malarious; in the desert (or eastern part), it is generally healthy but subject to great variations of temperature being excessively hot in summer and very cold in the winter, the cold increasing as the sand-hills are approached. From the beginning of November to the end of February the weather is pleasant and bracing after which the hot winds set in, accompanied with heavy dust-storms. The glare and heat during the summer months are intense.

RAINFALL

The rainfall is not equal throughout the extensive area of the district. It ranges between a little over four inches at Sanghar and nearly fourteen and a half inches at Nagar Parkar. The rainfall also varies considerably from year to year. During the last forty-five years the minimum amount of rain was received at Khipro in 1899 when it amounted to only four cents. On the other hand, the rainfall gauged in 1913 at Mitti amounted to forty-one inches and a half.

SOILS

The prevailing soil is a light-loam called by the natives "*Dasar*" a medium between stiff clay and fine sand. In the desert portion the soil is sandy. Its fertility depends entirely upon rain and also upon wells in the Nagar Parkar taluka. The soil in the Parkar tract is chiefly of the "*Dasar*" variety and yields good *rabi* crops. The western part of the district consists of good alluvial land.

CROPS

Bajri is the staple food crop of the district. The principal *kharif* crops are :—

Bajri.—It is grown in every taluka but to the largest extent in the four desert talukas of Chachro, Nagar Parkar, Mitti and Diplo. It occupies an area of over five lakhs of acres.

Rice.—It is practically confined to the Nara valley division consisting of the talukas of Sanghar, Samaro and part of Umarkot and Khipro. Rice occupies an area of nearly seventy thousand acres. Its cultivation is forbidden on the Jamrao Canal.

Cotton.—It is very extensively grown on the Jamrao Canal area consisting mostly of the talukas of Mirpurkhas, Jamesabad and Digri. It is also grown in Sanghar, Khipro and Samaro talukas. Cotton occupies an area of about one and a quarter lakhs of acres normally. Experiments have been made at different times with Egyptian, American and other varieties. Some American varieties promise well and have a future before them in these parts.

Sesame is mostly confined to the Chachro, Nagar Parkar and Mitti talukas which occupy nearly eighty-five per cent. of the total area of nearly six thousand acres.

Jowar.—Of the total area of about twenty-five thousand acres, Nagar Parkar alone occupies nearly fifteen thousand acres. Digri with four thousand acres and Jamesabad with three thousand come next. The cultivation is insignificant in the other talukas.

Rabi Crops.—Wheat is the main crop and is confined to the Mirpurkhas division consisting of Mirpurkhas, Jamesabad and Digri talukas. Its cultivation is also important in the Nara valley division. Wheat covers an area of about seventy-thousand acres.

Rapeseed and Jambho.—The former occupies less than two thousand acres and is almost exclusively grown in Digri and Jamesabad talukas. *Jambho* with an area of about eight thousand acres is chiefly grown in Umarkot, Sanghar, Samrao and Khipro talukas.

Gram with an area of about six hundred is mostly confined to the Sanghar taluka.

Vegetable and Fruit Trees.—The cultivation of indigenous vegetables in common use is particularly important in the Umarkot taluka and the Mirpurkhas division, though they are grown to a small extent in all the talukas. European vegetables and fruits, and particularly grapes and peaches, do extremely well at Mirpurkhas, and the Government Agricultural Farm there has done much to stimulate their growth. Umarkot is surrounded by old fashioned Sindhi gardens in which local varieties of mangoes thrive.

Fodder.—The cattle are grazed and the pasture is supplemented by the *Bajri* fodder which is preserved in stacks in the Mirpurkhas and Nara valley divisions. In the Desert there is abundance of grass whenever there is sufficient and timely rainfall. When there is a good rainfall the whole country looks like a meadow ripe for the hay harvest. In the absence of rains there is a fodder famine and cattle die of hunger. On the whole the question of fodder for cattle in this district specially in the Thar (Desert) portion is, in time of scarcity, as important as that of food for the people.

CATTLE

The total number of cattle in the district is nearly three and a half lakhs. Of this, the milch cattle are roughly one half the total, young stock nearly one-fourth while plough cattle are only one-fifth of the total. In milch cattle, cows are nearly seven to eight times the buffaloes in numerical strength. Sheep and goats together number over four lakhs. Donkeys and camels are found all over the district and number about thirty and forty thousand respectively. It is curious to note that the cattle did not suffer as severely as would be expected during the famine of 1918-19. The fairly good rains received in September 1918 produced sufficient grass for them and only few of the cattle suffered from starvation. The number of cattle was very nearly the same in the census of 1919-20 (which immediately followed the famine year of 1918-19) as it was in the previous cattle census of 1915-16 while the number of sheep and goat actually showed a rise in 1919-20 over 1915-16.

FORESTS

The forests are of little importance. A few "reserved" tracts, however supply timber, fuel and fodder. The common trees of the Nara valley are the *babul, nim, pipal, lai, siria* and *kirir*, while the *jar, kumbhat, kandi, raneri*, and a few other species flourish in the desert tracts. It may here be remarked that owing to differences of soil, the trees grown in one portion of the district cannot thrive in the other.

IRRIGATION

The principal canals which serve the district are the Jamrao Canal and the Eastern Nara Canals. A brief description of each of them is given below :—

Jamrao Canal.—The canal which takes off from the Eastern Nara near the junction of the boundaries of Khairpur State, Hyderabad and Thar Parkar districts, was commenced in 1894 and completed in the year 1899. The main canal has a maximum discharging capacity of 3,200 cubic feet per second at head, and is 117 miles in length. It has a bed width at head of 166 feet. It is furnished with a number of regulators at short intervals to facilitate the proper

distribution of water. The canal bifurcates in the 56th mile. The smaller channel named the West Branch is fifty-seven miles in length. The main canal irrigates the whole of Sinjhoro and Jamesabad talukas and part of the Mirpurkhas and Digri talukas whilst the West Branch irrigates the remaining portion of Mirpurkhas and Digri talukas. The Jamrao is a perennial canal and gets a very good supply in the *kharif* and only a fair supply in the *rabi* season. The three chief crops grown on the canal are cotton, wheat and *bajri*.

Eastern Nara.—The Eastern Nara Canals comprise the Eastern Nara, the Mithrao, the Khipro, the Thar and the Hiral. The Eastern Nara is commonly spoken of as a natural branch of the Indus. The upper part of the river, as it existed before works were undertaken by the British Government, was simply a channel, or narrow valley in the sand hills, through which spill water from the left bank of the Indus above Rohri, found its way to the Desert. Below the Mithrao there was a distinct channel through the alluvial plain to the sea, but this channel could be traced wetwards to its source, from an ancient course of the Indus upon which Alore stood. In 1859 the supply channel from the Indus at Rohri was opened. This was a cut twelve miles long leading from the river to the Eastern Nara. It was designed to discharge about 8,400 cubic feet per second during the inundation. In 1885, the channel was deepened and in 1894 further improvements were made in connection with the Jamrao Canal. Its discharging capacity at present is about twenty-thousand cubic feet per second during high inundation. Including the supply channel, the length of the Eastern Nara river from Rohri to the point where it discharges into Puran *Dhors* is 276 miles. In addition to the regulator at the head of the supply channel, four regulators have been provided, namely, a weir at the head of the Jamrao in mile 107, a regulator at Makhi in mile 137, a weir below head of Khipro in mile 172 and another below head of the Thar Canal in mile 204.

Mithrao Canal.—It takes off at the 136th mile of Nara and passes through the talukas of Sanghar, Khipro and Samaro. The main canal is ninety-six miles long and has a maximum discharging capacity of 2,800 cubic feet per second. The crops grown on the canal are rice, cotton, *bajri* and wheat.

Khipro Canal.—It is a small canal fifteen miles long which takes off the Nara at 172nd mile near the town of Khipro. The weir across the Nara was constructed in 1923 to improve the supply of this canal. The maximum discharge of the canal is two-hundred cubic feet per second.

Thar Canal.—The canal which was finished in 1867 takes off the Nara just above the weir in the 204th mile. Its bed width at head is fifty-five feet and maximum discharge fourteen hundred cubic feet per second. The canal irrigates lands in Umarkot taluka and is twenty-four miles long. It has five branches, all regulated with a total length of forty-eight miles.

Hiral Canal.—The canal which was completed in 1903 leaves the Nara immediately opposite the mouth of the Thar Canal. It irrigates the Samaro taluka, is nineteen miles long and has six branches all regulated with a total length of twenty-two miles. Its bed width at head is sixteen feet and maximum discharge two hundred and fifty cubic feet per second.

DRINKING WATER

The water supply in the district for drinking purposes is adequate. It is mostly derived from wells and tanks of which there is a sufficient number throughout the district. In the Desert, however, difficulty is felt when the monsoon fails. The wells are very deep and some of them get dry if there is no rainfall. The deepest well in the district is at Gadro (taluka Chachro) about three hundred feet in depth. The water of the Desert wells is generally brackish. In rainy season people seldom use well water. There are '*Tarais*' (tanks) in which rain water accumulates and lasts for several months.

TRADE AND INDUSTRIES

The manufactures of the district consist of woollen blankets and bags, camel saddles and covers, and coarse cotton cloths. Woollen rugs are manufactured by the Baloch who have settled in the Nara Valley and the desert. Women are very skilful in silk and cotton embroidery work. The district manufactures have little direct communication with Karachi or Bombay, but the European and Native firms of Karachi keep agents at Mirpurkhas, at Shadipali in Samaro taluka, at Dhoro Naro in Umarkot taluka, and at Umarkot itself. The exports consist principally of grain, wool, *ghi*, camels, horned cattle, hides, fish, salt, soda, and *pan*, a kind of reed from which fans are made. The grain (chiefly rice and wheat), cattle, goats and sheep are sent to Gujarat, Palanpur and Jodhpur; hides and wool to Hyderabad; *ghi* to Cutch, Karachi, Hyderabad and Gujarat and salt, fish, soda and *pan* to Hyderabad and Karachi. The chief imports are cotton, metals, dried fruits, dyes, piece-goods, silk, sugar, oil and tobacco. In the western and fertile talukas of the district where rice, cotton, wheat and oilseeds are cultivated, the conditions of trade are quite different. The great market for these products is Karachi.

There are at present eight ginning factories out of which two do not work, two cotton-pressing factories, five rice husking and four flour mills. The dyeing industry is still depressed owing to the high prices of colouring materials and cloth.

COMMUNICATIONS

The Jodhpur-Bikaner line from Hyderabad to Marwar runs through the district from the west to east for a distance of ninety-one miles and connects Mirpurkhas with Hyderabad. A feeder line runs south from Mirpurkhas to Jhudo, a distance of seventy-five miles, and another runs seventy-four miles north to Khadro, these two feeders effectively serving the Jamrao area. The Mirpurkhas-Jhudo feeder has been of considerable use to the Desert markets and now Jhudo has become the principal emporium of the Desert in place of Umarkot.

There are over 2,800 miles of roads in the district including a number of short roads connecting villages with one another or with the Railway. None of the roads are metalled but they are adequate for the nature of the traffic upon them. The desert roads are of heavy sand and there are sand hills of varying heights to be ascended and descended.

There are two ferries on the Mithrao canal and some temporary ones on the Nara. The canals are all bridged at suitable places.

RELIGION

According to the census of 1921 the total population of the district amounted to 396,331 persons. Of these Musalmans were 212,735 and Hindus 183,505. The number of Christians and Parsis was insignificant, being respectively eighty-three and eight only.

LANGUAGES

The chief languages spoken are Sindhi spoken by about forty-four per cent. of the population, Thareli or Dhatki spoken by nearly thirty-three per cent., Rajasthani by about nine per cent. and Balochi and Jatli spoken respectively by four and two per cent.

OCCUPATIONS

As might be expected, a large proportion (nearly seventy per cent.) of the population are supported by Pasture and Agriculture; Industry including mines, and Trade and Transport support twelve per cent. and eight per cent. of the population respectively, while the number supported by Professions and the Liberal Arts is less than one per cent., probably the lowest in the whole of the Bombay Presidency.

ECONOMIC CONDITION

As regards the economic condition of the population it may be remarked that the Sind portion of the district is agricultural. Some of the people of the Desert tract depend for their livelihood entirely upon agriculture, more entirely upon cattle and most upon both. There is a small number of petty traders, whose trade is almost wholly confined to grain, cattle and *ghi*. Nearly all of them own cattle themselves. Holdings are small and the people are poor with few wants and living generally from hand to mouth. Field labour there is none for the low castes have nearly all got their small holdings and a cow or donkey or two. The population is largely nomadic and the graziers in particular are accustomed to wander over the desert with their cattle. The extension of irrigation has created a demand for agricultural labourers which the district itself is normally unable to meet so that wages are kept at a reasonable level only by immigration.

LIABILITY TO FAMINE

In the district, the Desert portion alone is liable to famine. It depends entirely upon rainfall and requires ten to fifteen inches of rain for a successful season. The people live there by cattle-breeding and by cultivation. Insufficient rainfall leaves the population without their ordinary means of livelihood. It is the habit of the Thari to move when the rains fail that saves the situation to some extent at such times. In bad seasons, large cattle owners migrate with their cattle to distant places where they can find pasture. Cultivators migrate to the Nara Valley and the Hyderabad district where they obtain work as labourers.

In the Irrigation map of Sind, the areas of the district have been shown in different shades according to their liability to famine. The portion in the north-east of the district shown in green though subject to scarcity is close to the *dhands*, *i.e.*, small lakes fed by the Eastern Nara Canal where water and pasture are abundant as well as land for cultivation. The effects of famine in this portion are therefore not such as would necessitate relief measures for the population. The blank portion is practically safe from famine while the Desert portion on the east shown in yellow is most liable to famine.

FORMER FAMINES

The Desert tract has suffered a good deal within the last twenty years from deficient rainfall but seldom to such an extent as to require relief

measures. The season of **1911-12** was the worst that has been experienced since the famine of **1899-1900** on account of scanty rainfall. The maximum rainfall registered at Chachro was only two and a half inches, while other talukas received less than an inch. As a natural result there was practically no cultivation and most of what there was, failed to thrive. About four-fifths of the population left the Desert and scattered in all directions, taking their cattle with them. The District Local Board sanctioned a large sum for the excavation of tanks, which provided a considerable number with a livelihood; while the building of a *Kacheri* (office) at Nagar Parkar and three large schools at Diplo, Mithi and Chachro ensured regular employment for many more. On the whole, as far as human beings were concerned, there was distress but no loss of life.

The year **1915-16** was very unfavourable. Owing to the failure of monsoon rain, a fodder famine broke out in the Desert. The condition of cattle was miserable. The grazing fees in the Nara Valley division with the exception of Makhi Dhand, were foregone. This afforded considerable relief to distressed cattle owners. A large proportion of the cattle, however, died; it was estimated at forty to fifty per cent. The cattle were scarcely saleable.

The expectation of a famine in the Desert in the year **1918-19** proved groundless. In fact, the season was not so bad as it might have been in at least a part of the Thar. In the month of September there was a fairly good rainfall in Nagar Parkar, Diplo and Mithi. It produced sufficient grass for the cattle. As a whole the "Thar" was much better off than the Nara Country.

The very unfavourable inundation of **1920-21** caused some distress, which was even acute in parts but it nowhere amounted to a regular famine.

FORECAST OF RELIEF WORKS

No Relief Works were opened in any of the years mentioned above. The maximum number of the inhabitants likely to require employment on relief works in a year of famine may be placed at five thousand, and the number to be otherwise relieved at *two thousand and five hundred*. These numbers are, however, very liable to be increased by the special conditions of the Nara Valley and Mirpurkhas Divisions, where immigrants assemble in times of need, not only from the Desert, but in large numbers also from Jodhpur and Jesalmir territories. They find employment in a marvellous manner from different odd jobs.

THAR PARKAR STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages: Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921): Total	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available: Villages.	Area in acres.	Percentage of previous column on the area area	Area cultivated: Cropped (Net): Irrigated.	Cropped (Net): Not irrigated.	Fallows.	Area uncultivated: Area not available for cultivation: Forest.	Area not available for cultivation: Other.	Area uncultivated: Total.
		No.		No.		No.				Rs.	No.	Acs.		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mirpurkhas	122	408	..	7	123	415	40,960	99	2,49,662	123	265,346	100	62,006	19	129,884	191,909	49,166	73,435
2	Pithoro (Semaro).	125	483	..	1	125	483	31,707	66	1,92,575	125	309,181	100	57,188	206	163,947	220,443	57,243	1,431
3	Jamesabad	119	505	..	119	505	38,349	77	2,22,488	119	199,718	100	55,389	29	100,586	156,004	26,509	..	17,205
4	Diari	134	225	..	134	225	21,465	95	2,87,142	134	267,597	100	72,702	79	126,169	198,950	48,571	..	20,076
5	Diplo	42	1,503	..	42	1,503	12,489	10	11,853	40	961,757	100	..	28	9,642	28,475	34,143	849,175	927,594
6	Mithi	46	1,562	..	46	1,562	40,896	26	49,292	46	999,921	100	..	67	92,636	98,127	190,813	201,514	607,596
7	Nagar Parkar	131	1,618	..	131	1,618	40,664	25	51,007	131	1,035,457	100	..	67	173,692	182,132	335,801	133,756	965,930
8	Chachro	40	2,797	..	40	2,797	50,836	18	75,992	40	1,790,090	100	..	..	124,148	295,544	469,692	655,903	1,320,398
9	Umarkote	110	1,450	9	111	1,459	45,149	31	1,63,568	111	933,895	100	45,861	27,680	135,653	209,194	193,425	22,988	681,254
10	Khipro	125	2,251	..	125	2,251	36,870	16	1,45,089	125	1,390,098	100	55,792	447	182,447	238,686	70,027	12,925	1,119,190
11	Sanghar	67	818	..	67	818	52,332	60	1,64,115	67	523,204	100	51,051	25	69,481	120,557	309,708	4,950	88,009
	Total	961	13,620	2	16	963	13,636	396,331	29	16,08,776	963	8,727,011	100	400,084	478,515	1,487,593	2,366,192	1,825,775	42,294

No.	Taluka.	Area for which agricultural statistics are available: Area cultivated: Cropped (Net): Not irrigated.	Area cultivated: Fallows.	Area uncultivated: Area not available for cultivation: Forest.	Area uncultivated: Area not available for cultivation: Other.	Area uncultivated: Total.	Total.	Irrigation Abstract, 1922-23. Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mirpurkhas	19	24,269	..	24,269	73,435	62,006	..	..	..	2	..	2	62,006	107	10,339	211	186	18,466	45	570	9	539	29,132	2,211	62,708	702	62,006
2	Pithoro (Semaro).	206	163,947	220,443	57,243	1,431	57,188	..	..	..	..	..	..	57,188	21,346	8,205	9	863	11,135	9	102	..	211	14,375	1,785	58,068	880	57,188
3	Jamesabad	29	100,586	156,004	26,509	..	17,205	43,714	55,389	..	..	..	..	55,389	..	14,271	611	2,503	10,485	678	375	273	431	24,730	1,987	56,344	955	55,389
4	Diari	79	126,169	198,950	48,571	..	20,076	68,647	72,699	..	..	..	..	72,702	..	21,156	596	4,306	18,503	500	652	651	386	24,608	2,844	74,212	1,510	72,702
5	Diplo	28	9,642	28,475	34,143	849,175	927,594	23	..	..	..	..	23	28	..	..	7	3	..	..	..	..	..	..	2	30	..	28
6	Mithi	46	92,636	98,127	190,813	201,514	607,596	809,108	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	Nagar Parkar	67	173,692	182,132	335,801	133,756	965,930	699,686	..	..	..	67	67	..	34	..	..	..	..	..	..	..	33	..	..	67	..	67
8	Chachro	67	124,148	295,544	469,692	655,903	1,320,398	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	Umarkote	111	135,653	209,194	193,425	22,988	681,254	724,791	45,786	..	25	234	6,983	..	2	39	6,573	..	321	40	662	3,791	3,950	47,604	1,743	45,861
10	Khipro	111	182,447	238,686	70,027	12,925	1,119,190	1,202,139	55,786	..	..	48	211	55,792	13,376	2,324	48	211	23,536	..	521	24	237	14,998	1,144	56,440	648	55,792
11	Sanghar	25	69,481	120,557	309,708	4,950	88,009	402,667	51,044	..	..	15	704	51,051	11,761	4,528	15	704	16,439	..	709	1	204	15,658	1,553	51,532	481	51,051
	Total	1,487,593	2,366,192	1,825,775	42,294	4,492,750	6,360,819	5,399,919	..	..	167	..	433,085	271,834	67,937	13,959	85,159	1,239	3,303	1,006	2,690	127,283	15,436	407,027	6,941	400,086

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages: Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911): Total	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available: Villages.	Area in acres.	Percentage of previous column on the area	Area cultivated: Cropped (Net): Irrigated.	Cropped (Net): Net irri-gated.	Fallows.	Area uncultivated: Area not available for cultivation: Forest.	Area not available for cultivation: Other.	Area uncultivated: Total.
		No.		No.		No.				Rs.	No.	Acs.		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mirpurkhas	122	408	1	7	123	415	41,543	100	2,05,177	123	265,340	100	60,727	14	115,325	179,066	60,917	..
2	Samaro	126	492	3	3	129	495	30,530	73	1,66,884	129	309,429	100	51,016	206	164,443	215,665	58,890	1,719
3	Jamesabad	132	505	..	182	505	36,707	75	2,23,006	182	323,188	100	76,333	42	131,136	214,711	74,678	..	28,799
4	Diari	70	225	..	73	225	21,790	97	1,57,827	70	143,929	100	45,664	..	66,466	110,130	24,720	..	9,015
5	Diplo	42	1,503	..	42	1,503	21,969	17	2,309	42	967,766	100	..	86	577	51,697	32,310	81,108	..
6	Mithi	46	1,562	..	46	1,562	41,423	27	8,212	46	999,943	100	..	50	8,879	163,152	174,981	216,508	..
7	Nagar Parkar	131	1,618	..	131	1,618	47,544	29	4,563	131	1,035,457	100	..	42	67,637	243,775	332,917	152,917	..
8	Chachro	40	2,797	..	40	2,797	53,501	19	6,493	40	1,790,075	100	..	..	..	433,117	430,117	694,868	..
9	Umarkote	110	1,450	9	111	1,459	51,859	36	1,73,603	111	933,923	100	52,730	..	47	151,918	204,693	192,167	23,100
10	Khipro	125	2,251	..	125	2,251	40,171	21	1,46,625	125	1,440,815	100	54,517	..	..	187,948	242,465	64,934	14,186
11	Sanghar	67	818	..	67	818	31,301	38	95,149	67	523,247	100	39,625	..	..	76,315	115,940	313,549	5,044
	Total	961	13,621	2	16	963	13,637	433,398	32	12,22,779	963	8,727,682	100	328,990	77,214	1,778,680	2,234,884	1,952,113	44,050

No.	Taluka.	Irrigation Abstract, 1918-19. Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mirpurkhas	..	..	..	..	..	..	60,727	503	9,262	..	..	..	18,325	24	598	..	..	34,703	62,347	60,727
2	Samaro	..	..	..	..	..	..	51,016	23,398	9,154	..	..	..	8,532	8	243	..	..	16,231	51,016	51,016
3	Jamesabad	..	..	..	..	..	..	76,333	..	19,703	..	..	..	17,876	798	469	..	..	39,664	78,512	76,333
4	Diari	..	..	..	..	..	..	45,664	..	11,704	..	..	..	13,669	622	302	..	..	18,912	45,210	45,664
5	Diplo	..	..	..	..	..	..	86	..	..	Separate figures not available			29	..	..	..	..	58	86	86
6	Mithi	..	..	..	..	..	..	50	..	..				..	..	..	..	..	..	50	50
7	Nagar Parkar	..	..	..	..	..	..	42	..	42				..	..	..	..	..	2	87	42
8	Chachro	..	..	..	..	..	..	..	..	..				..	..	..	..	..	..	..	..
9	Umarkote	..	..	..	..	..	..	52,730	42,114	1,035	..	..	..	2,599	71	558	..	..	7,226	53,603	52,730
10	Khipro	..	..	..	..	..	..	54,517	23,518	623	..	..	..	11,819	36	189	..	..	19,266	55,261	54,517
11	Sanghar	..	..	..	..	..	..	39,625	17,511	1,122	..	..	..	7,154	1	175	..	..	14,044	40,027	39,625
	Total	..	..	..	..	..	..	378,850	107,064	45,685	..	..	..	78,002	1,560	2,522	..	..	152,422	387,255	378,990

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesamu.	Linseed.	Rape and Mustard.	Nigerseed.	Jambhlin.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder cropped.	net area
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Mirpurkhas	1,187	10,457	103	10,339	202	21	30,459	9	70	203	46	328	12	479	433	924	636	..	636	65	14	9	233	..	661	24	398	..	422	..	29,132	10	29,142	987	62,009	702	61,305
2	Samaro	861	11,324	21,346	8,203	33	9	41,760	3	72	..	72	88	49	71	233	353	78	..	78	70	62	8	39	..	109	15	1,149	450	1,614	..	14,323	9	14,330	64	58,276	880	57,396
3	Jamesabad	2,503	14,277	..	9,023	611	24	26,438	9	42	225	69	345	18	211	411	640	141	..	141	53	8	13	123	..	144	2	1,693	1,031	2,728	..	24,250	5	24,255	516	52,573	5,155	47,418
4	Diari	4,307	18,353	..	21,166	302	600	45,306	..	69	42	..	111	41	417	761	1,219	222	4,133	51	51	47	651	291	..	1,041	2	388	108	1,439	..	24,608	24	24,632	367	74,291	1,510	72,781
5	Diplo	533	9,027	..	34	..	4	9,610	..	..	..	..	..	19	6	153	178	163	..	163	..	..	..	19	..	19	..	19	1	39	..	1,249	..	1,288	..	9,820	150	9,670
6	Mithi	23	87,398	..	..	..	..	87,421	..	..	..	..	..	267	29	322	618	3,612	..	3,612	..	..	..	1	..	1	..	245	..	246	..	1,299	..	1,299	..	92,577	538	92,038
7	Nagar Parkar	14,674	137,028	..	2,129	..	..	153,831	..	..	..	..	..	873	673	1,745	2,291	11,934	..	11,934	..	..	..	5	..	1,655	..	..	5,256	6,922	..	81	..	81	..	174,412	748	173,669
8	Chachro	..	153,471	..	..	..	..	153,472	..	..	..	..	..	1,742	11	553	2,306	22,853	..	22,853	..	..	..	..	..	2,200	..	..	..	2,200	..	..	..	..	..	177,146	..	177,146
9	Umarkote	43	33,276	23,251	6,983	..	2	65,857	..	..	..	..	..	402	2	493	897	497	697	1,194	122	1,210	12	..	12	56	40	21	..	61	..	3,674	6	3,702	143	73,286	1,745	71,541
10	Khipro	211	33,949	13,376	13,514	122	48	61,220	..	..	..	..	..	375	28	410	813	535	125	660	4	4	..	8	..	38	..	947	..	985	1	14,988	..	14,989	689	76,810	3,300	73,510
11	Sanghar	704	16,491	11,761	4,528	105	15	33,554	..	..	440	41	481	123	684	33	840	21	74	95	..	103	..	4	..	92	..	19	..	115	..	1,195	114	1,420	..	35,658	63	35,595	481	35,076
	Total	25,055	519,607	71,834	70,169	2,085	1,310	690,058	142	572	3,204	1,222	5,140	997	38,720	1,395	41,072	228	..	228	373	1,006	6,223	..	1,655	2	7,619	6,195	21,694	..	127,364	56	127,420	2,454	889,445	7,873	88,572

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Gawar	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesamu.	Linseed.	Rape and Mustard.	Nigerseed.	Jambhlin.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area twice cropped.	Remainder net cropped.	net area
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Ac.
1	Mirpurkhas	4,154	13,373	..	503	251	42	26,605	..	66	..	159	..	519	96	953	393	1,442	37	..	37	19	24	46	..	..	68	..	..	..	..	93	..	207	..	32,534	7	32,541	965	62,361	1,620	60,741
2	Samaro	740	5,696	23,398	3,154	29	24	33,017	..	..	..	120	..	120	88	86	90	264	76	..	76	8	8	38	..	..	46	..	..	..	..	534	..	534	..	37,555	61	37,570	659	51,034	5,500	45,534
3	Jamesabad	5,607	10,994	..	19,703	1,050	69	37,903	26	30	135	..	191	382	201	1,102	295	1,526	26	..	26	45	78	780	..	..	780	..	..	..	..	182	..	182	..	37,052	720	38,554	1,978	37,057	1,520	35,537
4	Diari	4,534	7,569	..	11,704	525	558	24,824	88	..	24	172	292	576	48	549	102	555	132	789	14	..	14	69	622	183	..	..	453	..	1,258	..	85	2	723	..	17,227	16	17,295	327	45,210	1,540	43,664
5	Diplo	204	451	..	17	..	..	696	..	..	..	..	..	..	..	6	..	6	..	2	..	2	..	..	..	..	..	..	..	..	..	..	48	..	48	..	99	17	82	..	99	16	83
6	Mithi	222	7,419	..	..	..	..	7,659	..	..	..	..	..	..	2	..	..	2	..	..	..	..	..	..	..	..	..	..	..	1,305	..	1,305	..	..	..	..	..	8,966	327	8,639	..	8,639
7	Nagar Parkar	18,591	100,439	..	409	..	..	119,439	..	..	363	241	15	619	1	2,602	1	2,604	..	..	..	195	..	..	..	..	..	..	..	14,772	14,968	..	2	..	2	..	67,749	64	67,685	..	67,749	..	67,749
8	Chachro	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	Umarkote	82	1,877	45,114	1,035	15	178	48,241	1	2	532	..	6	540	356	103	119	578	..	..	..	93	71	63	..	..	..	..	..	..	..	335	..	398	..	6,640	1	6,611	123	55,690	629	55,061
10	Khipro	973	10,074	25,518	625	20	231	37,521	..	..	426	..	126	552	69	39	110	198	..	..	..	89	36	122	..	..	12	..	..	..	..	267	..	267	..	39,095	20	39,115	58	39,173	659	38,514
11	Sanghar	491	6,390	17,551	1,122	54	33	25,621	..	32	27	..	..	59	46	55	40	141	..	..	..	..	71	..	..	..	..	..	..	..	..	341	..	341	..	13,515	21	13,515	58	40,027	402	39,625
	Total	35,600	94,138	107,064	46,177	1,974	961	285,914	54	155	1,851	711	581	3,352	891	5,441	1,178	7,510	163	..	163	403	1,560	779	..	1,017	..	1,883	16,032	19,763	2	143,630	69	143,699	2,266	464,632	8,428	456,204

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Large, i.e., of over 2 cattle.	Carts. For passengers.	For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Ac.
1	Mirpurkhas	9,964	32	151	92	15	9,504	2,166	9,961	1,312	31,922	1,333	4,537	20,181	1,150	591	3,208	166	2	446	18
2	Pithoro (Semaro).	6,024	..	166	86	3,012	14,831	2,800	5,126	713	32,758	1,329	7,970	11,963	2,182	618	2,695	..	..	467	12
3	Jamesabad	8,699	32	151	92	15	9,504	2,166	9,961	1,312	31,922	1,333	4,537	20,181	1,150	591	3,208	166	2	446	18
4	Diari	2,790	114	39	..	..	3,544	2,488	4,548	231	21,355	483	1,980	14,354	774	618	2,695	..	..	467	12
5	Diplo	43	..	115	6	1,272	12,891	1,104	2,491	252	18,314	371	6,312	29,199	3,442	3,280	2,605	..	..	..	..
6	Mithi	259	28	154	268	29	5,480	542	2,223	135	39,309	642	17,617	45,364	6,928	10,764	5,563	..	..	672	..
7	Nagar Parkar	4,002	..	115	101	400	12,713	1,461	8,700	726	33,218	478	18,356	44,446	2,018	4,603	5,434	..	..	198	82
8	Chachro	..	..	211	..	1,395	28,203	181	8,462	44	39,235	437	36,312	86,700	9,606	11,208	10,524	..	..	689	..
9	Umarkote	4,620	..	345	142	5,000	20,195	2,823	6,315	907	37,105	1,263	8,952	11,997	2,520	3,392	5,392	..	..	375	44
10	Khipro	8,903	..	323	124	306	..	14,299	3,703	3,279	981	32,428	1,663	12,978	16,045	1,952	3,892	..	..	193	15
11	Sanghar	6,256	..	305	81	366	16,894	3,359	2,697	916	30,849	2,715	15,141	35,883	1,172	2,631	4,887	..	..	51	14
	Total	55,822	203	2,145	709	10,500	683	177,167	221,148	66,456	7,805	342,688	12,345	134,357	348,434	33,944	41,283	52,755	167	2	2,684

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Large, i.e., of over 2 cattle.	Carts. For passengers.	For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Ac.
1	Mirpurkhas	10,709	9	64	3	276	9	10,799	7,915	8,441	33,917	1,719	33,932	26,161	1,534	1,680	2,458	2,061	18	228	13·7
2	Pithoro (Semaro).	9,256	9	84	31	306	11,164	2,321	6,032	1,146	30,357	1,404	10,395	14,106	2,179	907	2,956	1,000	12	107	15·2
3	Jamesabad	13,304	356	65	51	409	14,030	3,127	10,057	2,446	44,023	2,112	6,144	26,096	3,136	1,349	3,457	1,971	..	593	14·0
5	Diplo	8,367	228	32	16	113	7,120	2,700	6,401	1,832	27,013	1,227	2,075	11,647	1,175	916	2,097	1,549	22	400	13·4
6	Mithi	1,074	32	888	161	103	16,464	1,440	5,271	609	26,183	446	6,269	30,747	3,239	3,548	911	1,572	..	411	9
7	Nagar Parkar	972	282	83	39	938	9,278	649	6,975	224	31,038	222	12,033	58,209	5,125	9,934	5,660	..	..	..	..
8	Chachro	1,589	16	54	4	198	854	3,965	543	15,490	282	9,443	39,827	7,238	4,597	2,142	..	27	..	340	..
9	Umarkote	689	66	44	4	3,999	443	22,262	331	9,720	117	34,780	493	16,039	65,222	6,903	8,591	7,703	..	..	..
10	Khipro	2,532	89	133	46	897	58	25,357	2,910	10,369	1,262	43,570	1,234	11,759	19,003	5,324	1,945	3,758	1,000	21	180
11	Sanghar	9,715	23	276	26	556	47	18,115	3,836	7,446	1,821	41,913	1,933	13,770	18,679	2,446	1,854	3,461	1,655	8	169
	Total	76,407	1,113	1,088	300	5,886	1,098	167,853	24,157	79,281	12,440	362,633	13,495	108,858	320,050	32,691	35,840	37,150	10,086	812	112

THAR PARKAR STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Mirpurkhas ..	26	..	..	331	..	..	..	17	17	122	..	..	111	6	189	..	..
2	Pithoro (Samaro) ..	12	..	..	..	..	..	..	..	..	50	..	..	3	..	27	..	..
3	Jamesabad ..	12	..	..	231	..	..	..	..	..	42	..	..	127	..	..	..	..
4	Digri ..	10	..	..	248	..	..	3	3	3	68	..	..	88	21	..	..	..
5	Diplo ..	1	..	..	1	..	..	2	..	2	432	9	..	30	..	..	..	..
6	Mithi ..	1	..	..	..	..	..	3	..	3	95	..	..	95	..	..	..	..
7	Nagar Parkar ..	..	..	..	..	..	..	222	212	434	634	4	..	200	..	..	..	..
8	Chachro ..	..	..	..	..	..	..	3,594	..	3,594	179	2	..	153	6	..	..	..
9	Umarkot ..	10	..	..	343	..	..	47	47	253	153	..	..	..	..	..	..	..
10	Khipro ..	11	..	..	456	..	..	3	3	306	..	148	..	..	22	1	..	..
11	Sanghar ..	9	..	..	161	..	..	3	3	60	2	..	..	..	..	..	..	..
	Total ..	92	..	..	1,929	..	..	6	122	128	6,065	165	..	986	56	217	..	..

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Jamrao Canal ..	Figures not available for the Civil District.	596,872	108,000	108,000	128,042	58,401	186,443
2	Eastern Nara ..		501,440	41,500	41,900	39,434	9,069	48,503
3	Mithrao Canal ..		406,579	142,500	142,500	88,259	9,510	97,769
4	Khipro Canal ..		33,845	2,000	2,000	3,585	248	3,833
5	Thar Canal ..		130,000	35,000	35,000	35,536	11,394	46,930
6	Hiral Canal ..		50,154	13,000	13,000	12,176	2,564	14,740
7	Gharo Mahamudo ..		30,059	3,000	3,000	4,226	290	4,516
8	Kari Shumali ..		210,076	4,000	4,000	3,903	107	4,010
	Total ..		1,967,025	349,400	349,400	315,161	91,583	406,744

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of holding.	Assessment holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Mirpurkhas ..	195	1,266	2,096	372	51	3,980	187,671	47 2	57 4 9	1 3 3
2	Pithoro (Samaro) ..	56	157	248	361	118	940	220,224	234 2	194 0 9	0 13 3
3	Jamesabad ..	5	209	942	255	65	1,476	155,956	105 6	144 14 8	1 5 11
4	Digri ..	127	418	1,405	330	75	2,355	192,091	81 5	115 9 11	1 6 8
5	Diplo ..	2	2	1	..	..	5	279	46 5	0 10 6	0 0 3
6	Mithi ..	4	12	..	..	..	16	149	9 3	..	..
7	Nagar Parkar ..	..	..	..	..	..	..	..	..	..	..
8	Chachro ..	..	..	..	..	..	..	..	..	..	..
9	Umarkote ..	257	360	252	253	36	1,158	143,364	123 8	124 12 6	1 0 2
10	Khipro ..	318	692	491	396	109	2,006	231,509	115 4	67 1 0	0 9 4
11	Sanghar ..	207	285	173	142	66	873	120,384	137 8	153 4 1	1 1 10
	Total ..	1,171	3,401	5,608	2,140	520	12,810	1,251,627	97 7	102 3 5	1 0 9

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per head of population including alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Mirpurkhas ..	62,623	2,28,044	3 10 3	40,960	5 12 1
2	Pithoro (Samaro) ..	59,228	1,82,402	3 1 3	31,707	5 12 1
3	Jamesabad ..	50,174	2,13,897	3 12 11	24,750	8 10 3
4	Digri ..	74,267	2,72,162	3 10 8	35,464	7 10 9
5	Diplo ..	13,432	2,062	0 2 5	17,489	0 1 11
6	Mithi ..	107,401	27,598	0 4 4	40,886	0 10 10
7	Nagar Parkar ..	182,164	45,342	0 4 0	40,660	1 1 10
8	Chachro ..	199,173	54,939	0 4 5	50,836	1 1 3
9	Umarkote ..	73,616	1,45,247	1 15 6	45,147	3 3 6
10	Khipro ..	57,555	1,34,931	2 5 6	36,072	3 11 10
11	Sanghar ..	52,666	1,39,791	2 8 8	32,332	4 2 3
	Total ..	928,551	14,40,415	1 8 10	396,331	3 10 2

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Jamrao Canal ..	Figures not available for the Civil District.	590,496	196,832	118,425	58,502	176,927
2	Eastern Nara ..		501,609	90,900	21,970	3,678	25,648
3	Mithrao Canal ..		406,675	145,900	101,216	5,163	106,379
4	Khipro Canal ..		33,745	8,000	2,418	1	2,419
5	Thar Canal ..		136,800	50,000	50,134	2,587	52,721
6	Hiral Canal ..		49,916	15,700	11,902	530	12,432
7	Gharo Mahamudo ..		30,300	*	5,781	198	5,979
8	Kari Shumali ..		26,600	*	4,452	67	4,519
	Total ..		1,785,341		504,932	316,278	70,746	387,024

* Included in Hyderabad District.

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Mirpurkhas ..	Maximum 1913 ..	..	0·58	0·06	..	..	0·52	11·76	2·74	4·44	..	0·04	0·35	20·49
		Minimum 1899 ..	..	..	0·12	..	..	..	..	..	..	..	..	..	0·23
		Average ..	0·06	0·09	0·11	0·09	0·27	0·20	0·85	1·79	1·03	0·08	0·01	0·08	4·76
		Rainfall for 1922-23 ..	0·02	0·39	..	..	0·08	..	2·50	3·22	0·28	..	..	..	6·49
2	Pithoro (Samaro) ..	Maximum 1917 ..	..	..	0·58	..	0·70	..	3·27	8·00	3·98	1·47	..	..	18·00
		Minimum 1920 ..	0·03	0·28	..	..	0·75	0·11	0·05	0·53	..	..	..	..	1·75
		Average ..	0·07	0·08	0·10	0·01	0·38	0·36	2·55	2·83	1·02	0·30	0·04	0·01	7·77
		Rainfall for 1922-23 ..	0·03	0·40	..	0·03	..	..	0·66	2·64	0·02	..	..	..	3·76
3	Jamesabad ..	Maximum 1917 ..	..	..	0·41	..	3·01	..	0·20	10·65	7·89	1·20	..	23·36	
		Minimum 1918 ..	0·04	..	..	..	..	..	0·05	0·15	0·05	..	0·12	0·36	
		Average ..	0·09	0·06	0·11	0·01	0·57	0·26	1·91	3·18	1·48	0·30	0·07	0·02	8·06
		Rainfall for 1922-23 ..	0·05	0·39	..	..	0·05	..	0·27	2·87	0·09	..	..	..	3·72
4	Digri ..	Maximum 1917 ..	..	..	0·29	..	0·60	..	0·14	10·97	6·86	1·14	..	..	20·00
		Minimum 1887 ..	0·53	..	..	..	..	..	..	..	..	..	..	..	0·53
		Average ..	0·07	0·09	0·08	..	0·44	0·24	2·05	3·23	1·43	0·23	0·02	0·02	7·80
		Rainfall for 1922-23 ..	..	0·41	..	..	0·25	..	0·10	2·82	0·16	..	..	..	3·79
5	Diplo ..	Maximum 1917 ..	..	..	..	0·12	3·26	0·40	1·29	4·06	3·42	1·88	..	..	14·48
		Minimum 1918 ..	..	..	0·05	..	..	..	0·02	1·16	0·47	..	..	..	1·70
		Average ..	0·01	0·02	0·02	0·05	0·87	0·50	2·78	2·86	1·33	0·53	..	..	8·99
		Rainfall for 1922-23 ..	..	0·06	..	..	0·04	..	0·95	2·69	0·63	..	..	..	4·32
6	Mithi ..	Maximum 1913 ..	..	..	..	0·39	..	1·70	13·97	18·18	7·07	..	..	0·11	41·42
		Minimum 1899 ..	..	..	..	..	0·10	..	..	..	..	..	..	0·02	0·12
		Average ..	0·01	0·02	0·01	0·02	0·68	1·26	3·72	4·74	2·14	0·52	0·05	..	13·17
		Rainfall for 1922-23 ..	..	..	..	..	0·65	..	1·95	1·20	1·65	..	..	..	5·45
7	Nagar Parkar ..	Maximum 1917 ..	..	..	0·15	..	5·22	1·16	10·86	7·05	8·29	8·23	..	..	40·96
		Minimum 1899 ..	..	..	..	..	0·36	0·25	..	..	..	..	..	0·03	0·64
		Average ..	0·02	0·17	0·11	0·04	0·34	0·62	3·58	5·38	1·76	0·43	0·10	0·02	14·57
		Rainfall for 1922-23 ..	..	0·07	..	..	0·24	5·33	1·28	6·40	..	..	..	..	13·24
8	Chachro ..	Maximum 1913 ..	..	0·02	0·02	..	0·02	2·33	5·37	8·19	10·61	..	..	..	26·96
		Minimum 1899 ..	..	..	..	..	..	0·14	..	..	..	..	0·05	0·14	0·33
		Average ..	0·04	0·05	0·05	0·01	0·30	0·63	2·27	3·18	2·96	0·74	0·05	0·01	10·29
		Rainfall for 1922-23 ..	..	0·12	..	0·03	0·80	..	1·64	2·62	3·53	..	..	..	8·74
9	Umarkot ..	Maximum 1913 ..	..	0·04	..	..	..	1·43	5·70	6·64	12·48	..	..	0·07	26·36
		Minimum 1899 ..	..	..	..	..	..	..	..	..	..	..	..	0·06	0·06
		Average ..	0·15	0·12	0·19	0·07	0·11	0·55	2·98	2·30	1·33	0·08	0·04	0·03	7·75
		Rainfall for 1922-23 ..	0·12	0·40	..	0·10	0·20	0·05	2·42	1·22	1·16	..	..	..	5·67
10	Khipro ..	Maximum 1913 ..	..	1·47	..	..	..	1·86	6·29	2·56	6·34	..	..	0·16	18·68
		Minimum 1899 ..	..	..	..	..	0·04	..	..	..	..	..	..	..	0·04
		Average ..	0·08	0·13	0·08	..	0·36	0·18	1·18	5·63	1·07	0·15	0·02	0·04	8·74
		Rainfall for 1922-23 ..	..	0·08	..	..	..	0·19	1·60	3·50	0·78	..	..	..	6·15
11	Sanghar ..	Maximum 1897 ..	0·02	0·03	0·27	..	..	..	6·84	4·90	0·11	..	..	..	12·67
		Minimum 1904 ..	0·35	..	0·32	..	..	..	..	..	0·06	..	..	..	0·73
		Average ..	0·16	0·13	..	0·14	0·21	0·27	0·67	1·73	0·68	..	..	0·15	4·12
		Rainfall for 1922-23 ..	0·02	0·10	..	..	0·08	..	0·79	1·14	0·23	..	..	..	2·36

Temperature Details (Mirpurkhas).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	86	92	97	98	107	105	97	93	94	92	91	
	Mean minimum ..	51	62	71	80	83	85	85	81	81	73	65	61
	Absolute maximum ..	98	94	100	100	102	111	108	98	95	92	93	92
	Absolute minimum ..	49	60	68	78	80	82	86	80	80	72	63	60
1914	Mean maximum ..	78	78	77	103	107	109	103	104	97	93	90	88
	Mean minimum ..	52	62	71	84	85	85	80	81	85	71	62	53
	Absolute maximum ..	80	80	80	107	110	114	106	105	100	95	91	90
	Absolute minimum ..	60	62	66	82	82	85	82	80	83	70	65	60
1915	Mean maximum ..	85	94	99	100	110	108	107	101	99	95	88	85
	Mean minimum ..	50	61	71	80	80	81	84	80	82	67	61	50
	Absolute maximum ..	98	96	104	105	112	108	103	102	96	90	87	
	Absolute minimum ..	48	58	67	76	76	77	84	82	78	68	59	48
1916	Mean maximum ..	86	90	106	105	115	116	106	103	101	102	99	84
	Mean minimum ..	40	50	59	61	58	77	78	92	55	50	50	40
	Absolute maximum ..	Details not available.											
	Absolute minimum ..												
1917	Mean maximum ..	82	95	102	108	111	104	99	102	99	97	91	85
	Mean minimum ..	40	40	46	50	61	74	71	70	70	69	42	40
	Absolute maximum ..	Details not available.											
	Absolute minimum ..												
1918	Mean maximum ..	89	89	94	110	110	105	102	102	100	105	101	88
	Mean minimum ..	40	42	50	56	70	78	72	61	64	45	39	
	Absolute maximum ..	Details not available.						102	105	101	105	101	85
	Absolute minimum ..							73	72	70	60	45	35
1919	Mean maximum ..	86	93	98	109	113	109	109	101	99	96	95	83
	Mean minimum ..	34	40	48	58	65		80	80	80	58	45	40
	Absolute maximum ..	92	96	107	113	116	104	100	99	96	96	95	83
	Absolute minimum ..	34	40	55	68	78	80	80	80	80	56	45	33
1920	Mean maximum ..	77	96	102	101	96	102	115	99	107	111	98	83
	Mean minimum ..	36	40	45	63	68	76	70	72	73	64	42	37
	Absolute maximum ..	77	98	103	105	105	114	115	92	96	111	98	83
	Absolute minimum ..	36	40	45	50	62	70	70	72	73	69	42	34
1921	Mean maximum ..	84	95	110	..	..	103	96	94	103	98	73	
	Mean minimum ..	33	35	50	62	70	91	91	94	55	54	31	
	Absolute maximum ..	94	95	110	107	108	110	101	94	103	98	73	
	Absolute minimum ..	36	35	50	58	61	71	72	75	71	55	54	32
1922	Mean maximum ..	74	81	93	101	104	87	99	93	95	92	90	80
	Mean minimum ..	51	57	51	70	69	79	79	70	70	66	55	59
	Absolute maximum ..	79	80	93	101	109	98	98	92	98	90	86	75
	Absolute minimum ..	51	50	60	70	70	80	79	77	66	55	57	52

Prices—Pre-war Normal.

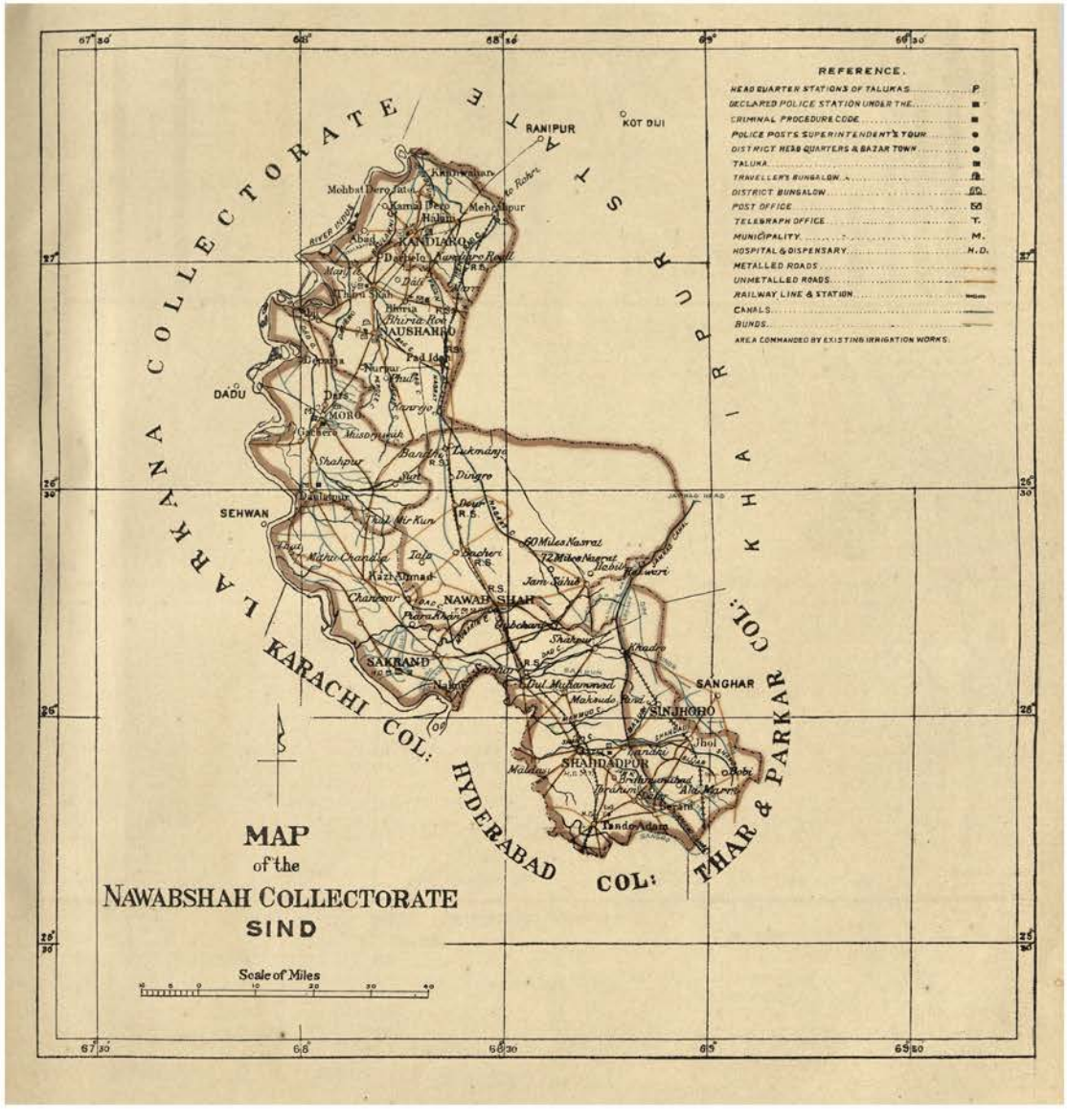
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Mar.	Jowari-Kadbi.	Wages per diem per man. Dry grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.						Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Mirpurkhas ..	29	25	13	19	120	170	1 7 2	0 14 5	0 9 7
	Non-headquarter towns.									
2	Samaro ..	..	24	17	15	128	193	1 1 2	0 6 10	0 6 6
3	Jamesabad ..	24	22	17	12	..	1	1 6 5	0 7 5	0 7 2
4	Digri ..	..	25	14	15	..	133	1 0 10	0 8 6	0 6 11
5	Diplo ..	32	24	18	22	..	264	1 0 11	0 8 5	0 7 0
6	Mithi ..	24	24	17	24	..	..	1 0 12	0 8 5	0 7 2
7	Nagar Parkar ..	..	25	19	22	..	215	0 14 2	0 8 5	0 6 9
8	Chachro ..	..	27	19	22	..	274	0 11 0	0 6 2	0 5 8
9	Umarkote ..	..	25	20	22	123	112	1 3 6	0 7 10	0 7 3
10	Khipro ..	..	24	17	19	..	196	1 2 7	0 9 11	0 8 2
11	Sanghar ..	23	24	19	17	155	196	1 3 0	0 8 3	0 8 9
	Average of the non-headquarter towns.	26	24	17	20	135	191	1 0 3	0 7 0	0 8 10

Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Mar.	Jowari-Kadbi.	Wages per diem per man. Dry grass.	Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter town.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Mirpurkhas ..	19	20	9	9	..	140	2 1 0	0 15 0	1 0 0
	Non-headquarter towns.									
2	Samaro ..	..	17	12	10	73	..	2 0 0	0 12 0	1 0 0
3	Jamesabad ..	..	19	10	13	80	..	2 2 0	0 11 0	1 0 0
4	Digri ..	19	16	10	11	..	92	2 2 0	0 12 0	1 0 0
5	Diplo ..	20	18	8	..	..	112	2 3 0	0 12 0	1 0 0
6	Mithi ..	15	14	10	10	..	98	1 7 0	0 9 0	0 14 0
7	Nagar Parkar ..	..	15	10	10	..	78	1 8 0	0 8 0	0 10 0
8	Chachro ..	..	14	10	12	..	138	1 8 0	0 8 0	0 8 0
9	Umarkote ..	..	14	10	12	..	120	1 8 0	0 12 0	1 0 0
10	Khipro ..	12	11	..	96	..	40	1 8 0	0 12 0	0 10 0
11	Sanghar ..	..	18	9	..	200	145	2 0 0	0 12 0	1 0 0
	Average for the period ..	21	19	8	..	157	2 8 0	0 14 0	1 0 0	1 0 0

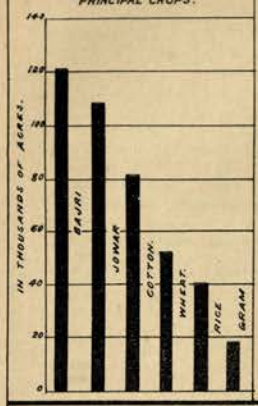
Famine Relief—Average Daily Numbers, 1911-12, 1918-19 and 1920-21.

Month.	1911-12. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.	No.	No.	No.	No.	lbs.	lbs.
							No Famine Relief Works opened.											


REFERENCE.
HEAD QUARTER STATIONS OF TALUKAS ..... P.
DECLARED POLICE STATION UNDER THE ..... ■
CRIMINAL PROCEDURE CODE ..... ■
POLICE POSTS, SUPERINTENDENT'S TOUR ..... ●
DISTRICT HEAD QUARTERS & BAZAR TOWN ..... ●
TALUKA ..... ■
TRAVELLER'S BUNGALOW ..... B.
DISTRICT BUNGALOW ..... DB.
POST OFFICE ..... P.O.
TELEGRAPH OFFICE ..... T.
MUNICIPALITY ..... M.
HOSPITAL & DISPENSARY ..... H.D.
METALLED ROADS
UNMETALLED ROADS
RAILWAY LINE & STATION
CANALS
BUNDS
AREA COMMANDED BY EXISTING IRRIGATION WORKS.
RANIPUR
KOT DIJI
KANDIARO
NAUSHAHRO
DADU
MORO
SEHWAN
NAWAB SHAH
SAKRAND
SANGHAR
SINJHORO
SHAHDADPUR
Tando Adam
LARKANA COLLECTORATE
KARACHI COL:
HYDERABAD COL:
THAR & PARKAR COL:
KHAIRPUR STATE
MAP
of the
NAWABSHAH COLLECTORATE
SIND
Scale of Miles

NAWABSHA DISTRICT.

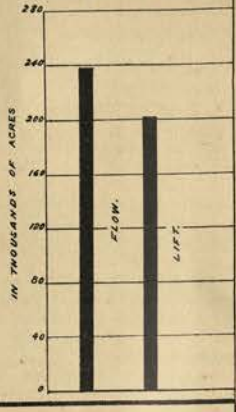
RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER IRRIGATION.

ONE DOT = 1000 ACRES.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



AREA UNDER CROPS.

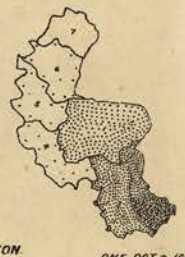
BAJRI. ONE DOT = 100 ACRES.

JOWAR. ONE DOT = 100 ACRES.

WHEAT ONE DOT = 100 ACRES.

LANG. ONE DOT = 100 ACRES.

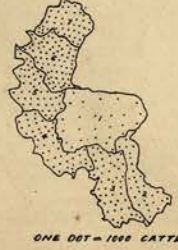
JAMBHO ONE DOT = 100 ACRES.



COTTON. ONE DOT = 100 ACRES.

NUMBER OF CATTLE.

1909-10



ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.

NAWABSHAH

POSITION AND AREA

The district of Nawabshah came into existence on November 1st, 1912. The Sinjhoro taluka was taken from the Thar and Parkar district, six talukas were separated from the Hyderabad district and these seven talukas constitute the present district.

It is bounded on the north by the Khairpur State, on the east by the same State and the Thar-Parkar district, on the south and south-west by the Hyderabad district and on the west by the river Indus. The river, however, being uncertain in its course is not always the boundary of the district, and at any given time portions of the riverain talukas may lie on the right bank of the river. The district occupies an area of about 3,900 square miles, though this may vary owing to river action. The greatest length is one hundred and four miles from north to south and the greatest breadth sixty-four miles from east to west.

PHYSICAL FEATURES

Except for a portion of Nawabshah taluka which includes part of the great Indian Desert, the district forms a portion of the alluvial plain of the Indus. It has, however, never been subject to the river floods or " lets " like the country to the north of it, as the land is generally high-lying.

CLIMATE

Climatically, the district is divided very sharply into an Upper Sind half and a Lower Sind half. The upper half includes roughly the talukas of Kandiaro, Naushahro and Moro and the northern half of the Nawabshah taluka ; while the lower half includes the southern half of the Nawabshah taluka and the talukas of Sakrand, Shahdadpur and Sinjhoro. In the southern or lower portion, throughout the six hot months a strong, steady sea-breeze blows a great part of every day and the whole of every night and heat is thus appreciably tempered. In the northern or upper half however, this breeze disappears and the climate has the full rigour of the Upper Sind hot weather.

RAINFALL

The normal yearly rainfall amounts to about five and a half inches. During the last forty-five years the maximum amount of rain received in a year was 22·51 inches at Sakrand during the year 1916, and the minimum 0·05 inches at Tharushah in 1900. It may, however, be remarked here that no part of the district depends in any way on rainfall, and the most that can be said is that occasional heavy rain is valuable for the production of wild fodder and not entirely useless for the crops. But the river levels are, for the latter, the only important consideration.

CROPS

The main crops of the district are *jowar*, *bajri*, rice and cotton in the *kharif* and wheat and *jambho* in the *rabi* season.

Jowar.—Jowar, which in a normal year occupies an area of about a hundred thousand acres, is chiefly grown in the north of the district, the taluka of Naushahro alone occupying about one-third of the total area. The talukas of Khandiaro, Moro and Nawabshah are also important centres of cultivation.

Bajri.—Bajri, which covers an area of over one lakh of acres, is principally grown in the Shahdadpur taluka which alone claims over one-third of the total area. It is also grown to an appreciable extent in the Sinjhoro, Sakrand and Nawabshah Talukas. The cultivation of *bajri* in the other talukas is small.

Rice.—The cultivation of rice occurs principally in the two talukas of Shahdadpur and Sakrand, which claim about two-thirds of the total area of nearly fifty thousand acres under the crop.

Cotton.—The cultivation of cotton which occupies an area of about eighty thousand acres is mostly confined to the south of the district comprising chiefly the talukas of Nawabshah, Shahdadpur and Sinjhoro which three (out of seven) put together account for over ninety-five per cent. of the area under the crop.

Wheat.—Except the two talukas of Nawabshah and Shahdadpur, where, owing to the absence of a river or a perennial canal, the cultivation of wheat is unimportant, the crop is grown in all the talukas of the district. It occupies an area of about fifty thousand acres ; but in the case of the four riverain talukas the wheat area is all crowded along the river in the *Kaccha* lands referred to above.

Jambho.—Jambho with an area of about ten thousand acres is cultivated in all the talukas, but chiefly in the west, this like wheat being a *rabi* crop on *Kaccha* lands.

A conspicuous feature of the north of the district is the number of gardens. Both European and indigenous fruits and vegetables grow very well in them. The oranges of Tharushah have a special reputation. Mangoes and lemons also flourish.

CATTLE

The cattle in this district number over three hundred thousand. Of these, nearly one-third are oxen for ploughs, one-third young stock and one-third milch cattle. Among the milch cattle, cows are three times as numerous as buffaloes. Sheep and goats which number three hundred thousand are found in all the talukas. Camels and donkeys which number about twenty thousand each and horses and ponies numbering nearly ten thousand are also met with in all the talukas.

FORESTS

Forests occupy an area of nearly one hundred and sixty-seven square miles of which six square miles are " Protected Forest " and the rest " Reserved Forest ". The riverain forests produce food and shade to the starving cattle in years of scarcity when animals are brought from long distances, both from the hills and the Thar Desert. There is a considerable local demand for all classes of forest produce and excess stocks are transported by rail to Quetta and elsewhere. Large areas of forest which now receive little or no water owing to the construction of protective bunds will, under the Sukkur Barrage Canals project, receive ample water in future.

Besides forests, there are considerable numbers of isolated *babul* groves, mostly in private possession and grown on " Huri " land, which is land assigned for tree growth on reduced assessment.

IRRIGATION

Irrigation is either by flow or by lift. The lifts are Persian wheels, fixed up in hollows scooped out of the canal banks, or in natural hollows filled from the canals and worked by camels or bullocks. Lift cultivation is naturally less remunerative than flow cultivation, though rather more easy to regulate. There are also lands watered entirely from wells, this method being much more common in the northern talukas than in the southern, as the Irrigation Abstract will indicate.

The main canals in this collectorate are the Nasrat, Naulakhi, Dad, Alibahar Kacheri and Great Marak. These canals, which are all ancient, were probably old channels of the river adapted to the purposes of irrigation and gradually improved. They are all inundation canals.

Nasrat Canal.—It issues from the river channel known as Lundi Dhand in the Kandiaro taluka. In recent years the canal has been entirely reformed and vastly extended. After passing through Kandiaro and Naushahro it enters Nasrat taluka, which it has transformed from waterless waste into fertile fields. During the inundation the canal gets a maximum discharge of 2,300 cubic feet per second. The chief crops grown on the canal are *bajri*, *jowar* and cotton.

Naulakhi Canal.—It is one of the oldest canals and draws its supply direct from the river in the Kandiaro taluka and then traverses through the centre of Naushahro taluka supplying water on its way to orange and mango orchards of Tharushah. A little south of this town it bifurcates into two branches known as the Murad wah and Perozwah. The length of Naulakhi system is 123 miles. The width of the main canal is fifty-eight feet and at its bifurcation thirty feet. The average discharge is 1,150 cubic feet per second. The chief crops grown are rice, *bajri* and *jowar*.

Dad Canal.—It taps the Indus in Naushahro taluka and serves Moro, south-eastern portion of Nasrat and eastern border of Sakrand taluka. The present length of main canal is eighty-seven miles. The bed width is about eighty feet and the maximum discharging capacity at head 3,700 cubic feet per second. The chief crops grown on the canal are rice, *jowar* and *bajri*.

Alibahar Kacheri.—Originally this canal was fed direct from the river but for the last twenty years it has been taking water from the Nakur Dhand which feeds the Great Marak. The main canal is nearly twenty-two miles long and has branches, the total length of which is thirty-seven miles. This system irrigates land in the Sakrand, Hala and Shahdadpur talukas. A regulator at its head was constructed in 1921. The chief crops grown on these canals are *bajri* and cotton. A small area of rice is also grown.

Great Marak.—The Great Marak Canal takes off from the Nakur Dhand near the village of Saidabad in the Hala taluka and is twenty-six miles in length. This canal with its eighteen branches, which are 146 miles in length, forms the Great Marak system and irrigates lands in Sakrand, Sinjhoro and Shahdadpur talukas of Nawabshah district and Hala taluka of the Hyderabad district. It

bifurcates near the Shahdadpur town into two branches. A head regulator was constructed to this canal in 1920.

The only river embankment existing in the Nawabshah district is Naulakhi-Bhorti Bund. It is eight miles in length.

The area irrigated by the different canals in a year when the inundation is low as in 1918-19 and when it is normal as in 1922-23 will be seen from Table of Government Protective Irrigation works. As the district lies high the crops are mainly *kharif*. The only exceptions to this occur in (1) the Sinjhoro taluka under the perennial Jamrao Canal and (2) the " Kacchas " or riverain alluvial lands liable to flooding every monsoon, along the Indus, on both of which areas *rabi* crops of wheat, *Jambho*, etc., are grown.

DRINKING WATER SUPPLY

The condition of drinking water supply is usually satisfactory throughout the district.

TRADE AND INDUSTRIES

The district is purely agricultural. Its principal crops are *jowar*, *bajri* and cotton and these are exported. The only imports are clothes, rice, sugar, and articles of European manufacture. The export by river is negligible and long distance transport by road is now small. The long distance traffic is now almost entirely by railway. Tando Adam is the chief business centre of the district and agencies of some of the European firms of Karachi are established there. There are fifteen cotton-ginning factories in the district, half of which are at Tando Adam. There are also a few rice-husking factories.

Twenty-four fairs are held at different places throughout the year and a considerable retail business in ordinary necessities of life is done at them.

There is no important industry other than that of agriculture. Pack saddles are made at Khadro and rough woollen carpets at Pad-Idan, but both industries are on a very humble scale.

COMMUNICATIONS

The North-Western Railway runs from north to south through the middle of the district. Two taluka headquarters, *viz.*, Nawabshah and Shahdadpur, are situated on its line and three taluka headquarters, *viz.*, Naushahro, Kandiaro and Sakrand, are situated at a distance of about twelve miles from the nearest railway station. The Mirpurkhas-Khadro Light Railway runs through the Sinjhoro taluka connecting it directly with Hyderabad.

The road communications of the district are on the whole good, and though no road is metalled they have, up to the present, served the traffic that plies upon them quite satisfactorily. The trunk road from Rohri to Hyderabad runs throughout the district.

The river Indus forms the western boundary of the district. It is navigable by country boats at all times of the year and affords facilities of communication for import and export of trade articles and agricultural produce for the areas in proximity to the river.

POPULATION

The population of the district at the Census of 1921 is 418,660. Of this, 321,135 are Mahomedans, 97,481 are Hindus (including Sikhs, the two religions merging into one another), Animists and Arya Samaj; there are 40 Christians, 3 Parsis and one Jain. Of Hindus the bulk 58,964 are Lohanas including Amils. Of the Musalmans, 92,432 are classified as Baloch, 94,133 as Saman, 9,693 as Arabs, 5,370 as Memon, 4,702 as Sumra, and 6,288 as Muhana.

OCCUPATIONS

By occupation 26,836 were supported by " income from rent of agricultural land ". 9,907 were classed as cultivating owners and 238,038 as cultivating tenants. The latter term means *haris*, who constitute, as will be seen, more than half the population of the district. The number returned as agricultural labourers was 11,701 and this figure, though trivial when compared with a Presidency district, is nearly twice as much as any other district in Sind. Industry accounted for 35,898, Transport for 4,691, Trade for 34,157, Public Force and Public Administration and the Professions for 11,356. These figures include both workers and dependents. Fishing, both in the Indus and *Dhands* (tanks, lakes, etc., fed by rainfall, overflows from Canals, or the Indus) is an important occupation and supported 2,143 persons. The small industry of egret-farming is also noteworthy and it may be presumed that the 374 persons recorded at the census of 1921 as supported by " Raising of small animals, birds, bees, etc.," are mostly assignable to this industry. The egrets are kept in large low sheds or bowers, in which are placed shallow pans of water, and are fed with small fish. The feathers are plucked in the season and sold in Sukkur.

ECONOMIC CONDITION

With regard to the economic condition of the people, it may be remarked that the population is divided rather sharply into the *Zamindar* class, the *Hari* class, the *banya* class and the labouring class. The land tenure is entirely *Zamindari*, with a few *jaghirs* (alienated holdings). The *Zamindar* or *jaghirdar* is the *Khatedar* responsible to Government for the assessment. He seldom cultivates himself but finds *haris* who are tenant cultivators financed by the *Zamindar* and remunerated by share of the produce. Their status is intermediate between those of a tenant and a labourer.

The *Zamindars* fall into various categories, namely, *Makani* (also called " Bunyadi "), *i.e.*, original *Zamindars*, who are nearly always Musalmans; *banya* or capitalist *Zamindars*, who are nearly always *Banias* or Amils, and have acquired their estates by sale or civil court decree; and colonists and grantees who are often Punjabis (chiefly on the Jamrao) or retired Military and Government officers. The Jamrao colonist cultivators are the most industrious and successful, but their opportunities are also greater than those of others owing to the better water supply.

Haris are the common cultivators, mainly Musalmans, who in the Presidency proper would be *rayats*.

There are practically no agricultural labourers and such labour as there is is taken up by miscellaneous employment.

Under the *banya* class above are included the ordinary shop-keepers who have not acquired land and blossomed out into *Zamindars*.

The average area of holding varies from twenty-three acres in the Kandiaro taluka to about 134 acres in Nawabshah taluka. The rate of assessment varies but little, the lowest being nearly a rupee at Kandiaro and the highest one rupee and five annas at Shahdadpur.

Wages are generally lower in this district than in the adjoining places, the reason being that there is no large town like Hyderabad to cause them to rise.

MIGRATION

Migration is also probably less than anywhere else in the Province owing to the absence of large towns and the lack of communications eastward through the Desert. But a number of Bhils and members of various Marwari castes come on to the cotton ginning and pressing factories in the ginning season.

FAMINE

The district may be looked upon as practically immune from famine. Floods caused either by heavy rains or abnormally high inundation, the silting of a canal, appearance of locusts, serious crop pests, poor or short inundation or some such other causes may cause in particular years acute distress in parts of the district but the distress has never been known to be so serious as to amount to famine since the formation of the district in 1912-13. In **1912-13** the head of the Dad canal was eroded by the river and deficiency of water-supply was felt in the Nawabshah taluka. In **1913-14** heavy rains and floods from the river and canals seriously injured the crops in Moro and Sakrand talukas. In **1914-15** the flood of the river submerged part of the Moro taluka and seriously injured the crop there; the breaching of the Navlakhi and Great Marakh canals flooded crops and also submerged villages in Nawabshah and Shahdadpur talukas. In **1915-16** the Lundi Creek was silted, the Nasrat canal worked very badly, locusts appeared and all these resulted in the failure of crops in parts of the district. In **1918-19** the inundation was one of the shortest on record; the crop was destroyed by *khas* disease in the north of the district and the influenza epidemic hampered agricultural operations. In **1919-20** the river flooded a vast area of Moro and Naushahro talukas and the breaching of the Dad Canal added to the difficulty. The poor inundation coupled with absence of rain caused anxiety in **1920-21.** In **1921-22** the river flooded a part of the Moro taluka and destroyed the crop there.

It will thus be seen that during the eleven years since 1912-13 when the district came into existence, there were three years, *viz.*, 1916-17, 1917-18 and 1922-23, in which no serious damage to crops occurred. In the remaining years too (excluding the scarcity years of 1915-16, 1918-19 and 1920-21) the damage was mostly due to floods and was chiefly confined to the riverain talukas. In fact, excluding the three years 1915-16, 1918-19 and 1920-21, which were, no doubt, years of scarcity almost throughout the Province of Sind and the last two, all over the Presidency in addition, there were eight years out of eleven in which though some damage did occur in parts, the agricultural situation on the whole was fairly satisfactory.

Speaking generally, it may therefore be assumed that though damage in parts from one cause or other may happen at times, it would hardly be so serious as to amount to a regular famine—a famine necessitating the opening of relief works—and in this sense the district may be counted upon as immune from famine.

NAWABSHAH STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Population (1921). Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Others.	Total.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Double area cropped with irrigation more than once.	Net irrigated area.
			Acs.		Acs.		Acs.			Rs.				Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Nawabshah	184	967	..	..	184	967	38,062	39	2,47,758	184	617,290	100	75,796	114	121,340	197,250	84,275	..	535,765	620,040	75,770	..	..	26	..	75,796	392	191	7	17,798	17,242	..	648	..	45	23,095	16,581	76,139	343	75,296
2	Sinjhoro	132	475	..	..	132	475	43,186	91	2,60,844	132	304,413	100	73,855	31	130,428	204,314	60,754	..	39,345	100,099	73,849	..	..	6	..	73,855	1,942	10,610	11	3,136	22,492	128	761	114	481	32,005	3,330	75,010	1,155	73,855
3	Shahdadpur	93	561	..	..	93	561	88,334	158	3,09,395	93	359,142	100	101,925	..	99,122	224,525	74,726	..	66,091	134,767	101,825	..	..	..	..	101,925	18,649	1,220	..	3,879	42,452	3	6,605	..	286	24,093	11,428	108,583	6,658	101,925
4	Sakrand	88	490	2	16	90	506	53,522	106	1,78,618	90	332,849	100	47,465	4	56,112	164,189	61,595	50,498	56,967	168,660	46,942	..	..	523	..	47,465	9,912	3,441	15	9,481	10,928	..	2,278	..	194	1,278	5,049	50,526	3,111	47,465
5	Moro	74	433.10	19	49	93	483	54,134	111	1,59,040	94	311,353	100	42,092	14,363	84,895	141,550	59,850	12,121	97,832	169,803	41,245	..	..	847	..	42,092	4,189	6,253	100	19,473	6,436	..	83	5	411	439	5,089	43,478	1,386	42,092
6	Nausahahro	97	492	..	..	97	492	71,017	144	2,32,911	97	302,068	100	61,151	3,876	112,568	177,595	50,302	7,803	66,368	124,473	59,556	..	..	1,595	..	61,151	4,759	9,498	268	22,733	8,770	..	301	2	728	1,163	4,116	63,334	2,183	61,151
7	Kandiaro	85	405	..	..	85	405	70,205	173	1,55,977	85	267,152	100	39,222	11,456	95,400	146,058	33,130	18,869	69,095	121,094	31,538	..	..	7,223	461	39,222	1,018	10,702	99	22,072	5,132	..	113	1	325	27	611	40,096	874	39,222
	Total	753	3,824	12	65	765	3,889	418,660	108	15,44,543	765	2,494,267	100	441,506	34,682	779,143	1,255,331	424,642	89,291	725,003	1,238,936	430,775	..	..	10,270	461	441,506	40,852	41,965	1,496	109,572	121,432	131	10,989	127	1,470	81,978	46,204	457,216	15,710	441,506

Irrigation Abstract, 1922-23.

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Population (1911). Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on the gross area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallows.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Others.	Total.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Fodder.	Other non-food crops.	Total.	Double area cropped with irrigation more than once.	Net irrigated area.
			Acs.		Acs.		Acs.			Rs.				Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Nawabshah	183	964	..	..	183	964	35,681	37	1,57,647	183	617,252	100	50,128	3	150,747	200,928	80,302	..	336,022	416,324	49,325	..	..	14	839	50,128	184	62	..	..	..	..	22,987	..	3,537	543	22,990	50,303	125	50,178
2	Sinjhoro	132	476	..	..	132	476	45,163	95	2,24,493	132	304,403	100	72,262	..	127,509	199,771	64,995	..	39,617	104,612	72,265	..	..	16	..	72,282	2,528	8,578	..	..	..	..	23,685	122	343	1,618	37,429	74,349	2,067	72,282
3	Shahdadpur	93	561	..	..	93	561	83,394	149	2,27,662	93	359,140	100	81,487	..	142,098	223,585	75,926	..	59,629	135,555	81,439	..	..	48	..	81,487	9,144	1,345	Separate figure not available.				41,381	..	244	105	25,898	85,115	1,528	81,487
4	Sakrand	88	501	2	16	90	517	56,759	110	1,03,028	90	330,927	100	39,359	2	127,386	166,749	61,824	49,512	52,863	164,178	39,269	..	..	383	3,213	39,359	7,987	2,804					24,227	1	432	329	5,403	41,183	1,824	39,359
5	Moro	74	434.10	19	51	93	485	61,090	126	1,25,423	84	310,414	100	48,251	..	94,765	142,536	61,475	12,361	94,022	167,858	54,480	..	..	1,996	11,772	48,251	3,088	9,076					32,504	1	1,114	196	3,507	49,426	1,175	48,251
6	Nausahahro	93	467	..	..	93	467	84,806	182	2,09,404	93	296,985	100	62,743	..	117,373	180,116	47,318	7,803	63,748	118,869	56,869	..	..	2,958	2,916	62,743	4,962	11,202					42,915	4	1,191	630	4,022	54,960	2,207	62,743
7	Kandiaro	85	416	..	..	85	416	81,583	196	1,59,056	85	266,304	100	47,052	..	99,205	146,257	34,556	18,869	66,622	120,047	28,805	..	..	7,181	11,066	47,052	1,263	15,240					29,786	6	454	295	1,350	48,396	1,344	47,052
	Total	748	3,819	12	67	760	3,886	448,478	116	12,04,693	760	2,487,425	100	401,352	5	856,605	12,59,962	426,376	88,565	712,522	1,227,463	358,946	..	..	12,579	29,822	401,352	29,098	48,305					217,485	184	7,339	8,712	100,599	411,122	10,370	401,352

Irrigation Abstract, 1918-19.

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Barley.	Others.	Total.	Pulses. Tur.	Gram.	Mugand Lilvd.	Lang.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesame.	Linseed.	Rape and Mustard.	Niger-seed.	Jambho.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Double area cropped.	Remainder cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Nawabshah	17,798	17,246	392	191	2	..	35,635	470	255	41	81	848	28	8,808	15	8,851	21	..	21	2	3,553	..	178	..	..	3,647	12	7,392	457	23,035	12	23,047	..	26,293	343	25,910
2	Sinjhoro	3,136	22,097	1,942	10,610	11	128	38,324	340	169	54	300	761	56	2,139	514	2,609	70	..	70	114	215	..	148	..	..	1,123	..	1,123	..	32,005	29	32,034	..	75,101	1,155	73,946
3	Shahdadpur	3,879	42,328	18,649	1,270	..	3	66,329	5,770	12	811	12	6,669	157	6,920	120	7,197	426	..	426	..	477	..	321	..	..	3,262	6	4,066	..	24,031	16	24,047	..	108,679	6,658	102,021
4	Sakrand	9,765	19,233	9,913	4,583	..	..	43,507	4,017	..	..	..	4,028	147	389	33	1,569	634	144	778	..	1,145	..	795	..	..	1,270	9	1,279	125	4,254	..	4,379	868	55,142	3,111	52,031
5	Moro	19,472	6,435	4,189	5,372	1,495	..	46,970	745	1,292	61	8,236	22	9,925	282	152	281	715	136	851	..	261	..	1,099	..	..	778	505	4,163	689	839	29	1,868	..	54,941	1,386	53,555
6	Nausahahro	33,733	8,770	4,750	10,242	518	..	58,013	344	17	2,333	107	2,801	210	1,812	515	2,537	136	..	136	3	591	..	535	..	..	1,052	..	2,178	357	1,163	15	1,178	..	67,218	2,183	65,027
7	Kandiaro	22,072	5,153	1,019	15,027	170	..	43,419	5,069	7	88	..	5,164	226	309	99	634	54	..	54	1	33	..	1,501	..	..	671	1	2,206	17	27	9	36	..	51,532	874	50,658
	Total	109,853	121,842	40,852	51,302	2,216	132	326,197	17,618	415	11,574	522	30,132	1,202	21,722	1,225	24,149	1,602	..	1,602	174	7,115	..	4,266	..	..	13,257	747	25,385	1,645	82,378	109	82,487	..	491,898	15,710	476,188

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Barley.	Others.	Total.	Pulses. Tur.	Gram.	Mugand Lilvd.	Lang.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesame.	Linseed.	Rape and Mustard.	Niger-seed.	Jambho.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Double area cropped.	Remainder cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Nawabshah	13,474	9,222	184	62	1	28	23,021	1	130	79	1	211	6	3,505	22	3,533	18	..	18	..	821	..	9	..	..	826	..	1,656	351	20,957	11	20,968	545	50,306	125	50,181
2	Sinjhoro	4,215	18,293	2,528	8,578	99	289	34,452	2	86	111	95	339	57	1,649	253	1,959	35	..	35	18	172	..	84	..	..	142	..	398	..	35,989	18	36,003	993	74,349	2,067	72,282
3	Shahdadpur	2,750	37,047	9,144	1,543	7	29	50,320	1,192	7	938	9	1,547	51	515	116	682	426	..	426	15	..	..	105	..	..	280	..	1,097	..	24,361	14	24,375	4,553	83,115	1,628	81,487
4	Sakrand	9,653	16,233	3,987	2,804	69	52	32,500	1,004	1	1,161	2	2,218	74	219	14	307	1,051	..	1,051	425	..	1	645	..	..	1,148	..	2,259	..	2,259	12	2,271	329	41,185	1,824	39,361
5	Moro	18,228	6,041	3,038	9,076	1,906	10	38,261	1,153	28	5,143	76	6,330	76	513	57	646	345	459	804	..	688	..	211	..	..	506	..	717	613	1,014	20	1,034	222	46,261	1,175	45,086
6	Nausahahro	33,398	7,017	4,962	11,202	1,037	63	57,699	226	11	1,161	..	1,398	88	604	501	1,193	136	..	136	2	956	..	255	..	..	259	..	609	279	2,948	50	2,998	632	64,950	2,207	62,743
7	Kandiaro	20,902	4,174	1,260	15,248	326	60	41,967	425	6	3,840	..	4,324	253	118	82	453	38	..	38	1	20	..	232	..	..	413	..	1,065	16	227	4	231	295	48,396	1,344	47,052
	Total	99,722	98,069	29,098	48,305	3,395	531	278,520	4,253	257	11,789	65	16,368	605	7,123	1,045	8,773	2,049	..	2,049	634	184	2,546	..	1,668	..	4,174	..	8,388	1,284	87,751	129	87,880	7,647	411,727	10,370	401,357

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen. No.	For Ploughs. He-buffaloes. No.	For Breeding. Bulls. No.	For Breeding. Bull-buffaloes. No.	For other purposes. Oxen. No.	For other purposes. He-buffaloes. No.	Milch-Cattle. Cows. No.	Milch-Cattle. She-buffaloes. No.	Young Stock. Calves. No.	Young Stock. Buffalo-calves. No.	Total. No.	Horses and Ponies. No.	Sheep. No.	Goats. No.	Donkeys. No.	Camels. No.	Ploughs. Small. No.	Ploughs. Large, i.e., of over 2 cattle. No.	Carts. For passengers. No.	Carts. For produce and goods. No.	Cropped land per pair of plough cattle. Acs.
1	Nawabshah	12,658	..	222	21	..	..	15,291	1,920	12,632	888	43,632	1,339	35,218	19,276	1,899	3,233	5,696	..	..	385	12·0
2	Sinjhoro	11,647	..	408	52	..	..	8,604	1,926	7,646	957	30,880	1,896	16,416	26,294	1,796	1,795	5,030	..	..	351	12·8
3	Shahdadpur	10,903	..	171	14	..	..	14,155	4,469	10,187	2,253	35,852	2,401	10,515	29,109	4,083	3,725	9,962	..	..	302	11·0
4	Sakrand	10,137	..	266	61	..	..	12,567	5,122	6,387	1,723	36,061	1,086	8,536	18,571	1,270	1,943	3,720	..	..	120	10·8
5	Moro	12,554	..	14	23	..	..	14,911	5,965	10,019	2,006	45,544	1,371	8,305	16,098	1,811	2,142	6,100	..	..	30	9·2
6	Nausahahro	17,025	..	198	57	..	..	15,885	5,918	12,196	2,378	53,660	1,547	6,850	32,764	3,491	1,510	7,247	..	..	61	7·9
7	Kandiaro	15,545	..	159	35	..	..	9,251	4,324	6,250	1,527	37,091	929	4,256	22,604	1,745	1,051	7,240	..	..	113	6·6
	Total	99,167	..	1,074	315	..	..	90,464	29,644	68,277	11,724	300,665	10,669	92,092	164,706	16,395	15,432	41,995	..	..	1,365	9·9

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen. No.	For Ploughs. He-buffaloes. No.	For Breeding. Bulls. No.	For Breeding. Bull-buffaloes. No.	For other purposes. Oxen. No.	For other purposes. He-buffaloes. No.	Milch-Cattle. Cows. No.	Milch-Cattle. She-buffaloes. No.	Young Stock. Calves. No.	Young Stock. Buffalo-calves. No.	Total. No.	Horses and Ponies. No.	Sheep. No.	Goats. No.	Donkeys. No.	Camels. No.	Ploughs. Small. No.	Ploughs. Large, i.e., of over 2 cattle. No.	Carts. For passengers. No.	Carts. For produce and goods. No.	Cropped land per pair of plough cattle. Acs.
1	Nawabshah	12,480	18	207	7	70	4	11,492	1,336	10,486	769	36,869	1,409	24,656	25,704	1,558	2,972	5,636	54	..	273	15·4
2	Sinjhoro	11,469	70	105	12	149	2	9,035	2,018	7,850	1,314	32,082	1,921	12,811	27,598	1,638	2,251	4,862	215	2	254	10·8
3	Shahdadpur	18,681	..	167	14	245	2	14,332	4,718	13,820	3,014	54,997	2,634	7,984	28,923	4,425	4,506	6,819	..	..	203	10·5
4	Sakrand	14,598	1	54	86	6	6	17,294	6,006	10,869	2,425	51,648	1,555	11,254	32,619	2,504	3,511	5,475	241	..	93	7·0
5	Moro	16,299	2	43	40	29	5	16,786	5,170	10,663	2,297	51,244	1,502	9,327	22,768	2,293	2,791	7,250	..	..	29	9·4
6	Nausahahro	21,255	4	115	31	71	13	18,853	7,116	16,571	3,297	67,334	2,094	1,790	42,875	4,125	5,249	9,233	20	..	70	6·7
7	Kandiaro	21,345	1	115	26	115	7	15,131	6,647	10,933	3,512	57,832	1,605	6,291	36,962	2,594	1,671	9,798	2	10	192	5·6
	Total	115,837	96	864	216	685	39	103,431	33,011	81,192	16,628	351,999	12,720	79,513	217,499	19,477	26,451	49,573	547	30	1,124	8·8

NAWABSHAH STATISTICAL TABLES—II.

Water-Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Canals and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Canals and Washing.	Wells in use. For Irrigation. Kachha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Tanks. For Drinking.	Tanks. For Canals and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Canals and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Nawabshah ..	2	..	..	..	..	..	62	62	290	..	..	99	..	..
2	Sinjhoro ..	3	..	..	..	..	..	51	54	107	..	..	120	..	..
3	Shahdadpur ..	4	..	..	..	..	..	83	83	365	..	..	21	..	..
4	Sakrand ..	9	..	..	..	..	..	49	302	351	70	..	4	..	..
5	Moro ..	4	..	..	..	..	..	1	906	907	118	..	25	..	..
6	Naushahro ..	5	..	..	..	..	..	..	2,205	2,205	108	2	15	..	..
7	Kandiaro ..	5	..	..	..	..	..	..	3,590	3,590	115	..	35	..	..
	Total ..	12	..	..	..	..	..	50	7,199	7,249	1,173	12	332	..	..

No.	Taluka.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Canals and Washing.
		No.	No.	No.
1	Nawabshah ..	33	..	99
2	Sinjhoro ..	..	..	120
3	Shahdadpur ..	..	..	21
4	Sakrand ..	..	..	25
5	Moro ..	..	..	24
6	Naushahro ..	..	..	35
7	Kandiaro ..	15	..	8
	Total ..	33	..	332

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Jamrao Canal	Figures not available for the Civil District.	201,917	55,000	55,000	43,196	12,792	55,990
2	Eastern Nara		2,529	50	50	47	29	76
3	Mehrabwah		63,946	7,050	7,050	7,019	341	7,360
4	Nasrat Canal		323,113	76,800	76,800	74,786	5,412	80,198
5	Naulakhi		162,189	45,900	45,900	42,916	9,831	50,847
6	Dambro		51,290	10,570	10,570	11,713	2,010	13,723
7	Dad Canal		313,721	103,100	103,100	94,819	22,432	117,251
8	Ren Distributary — Ex: Dad.		12,756	10,000	10,000	7,685	1,592	9,277
9	Ren Wah		1,258	500	500	381	157	538
10	Akbbar Kacheri ..		42,615	9,490	9,490	9,964	1,397	11,361
11	Great Marak		114,289	61,960	61,960	60,722	6,624	67,346
12	Gharo Mahmudo ..		119,034	19,980	19,980	19,534	2,544	22,078
13	Other Canals		24,897	6,840	6,840	4,469	2,087	6,556
	Total ..		1,429,554	407,240	407,240	376,353	66,248	442,601

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Average. Total Area.	Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Nawabshah ..	65	242	603	500	63	1,471	196,772	133·8	167 8 4	1 4 0
2	Sinjhoro ..	154	961	858	345	29	2,387	200,614	84·0	85 14 6	1 0 4
3	Shahdadpur ..	993	1,082	1,098	423	55	3,651	223,985	61·3	80 6 9	1 5 0
4	Sakrand ..	344	1,336	676	260	33	2,649	168,017	62·9	72 6 10	1 2 2
5	Moro ..	770	1,941	796	181	29	3,717	143,985	38·7	40 0 11	1 2 2
6	Naushahro ..	2,880	3,169	1,085	275	991	6,448	179,126	27·8	32 3 9	1 2 7
7	Kandiaro ..	2,909	2,754	927	236	18	6,442	146,685	23·0	22 15 11	1 0 15 10
	Total ..	6,711	11,485	6,043	2,220	326	26,785	1,261,178	47·0	53 4 10	1 2 5

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per head of population including alienations.
		Acres.	Rupees.	Rs. a. p.	No.	Rs. a. p.
1	Nawabshah ..	73,813	1,87,625	2 8 8	38,062	4 14 10
2	Sinjhoro ..	62,398	1,79,062	2 14 6	43,186	4 2 4
3	Shahdadpur ..	99,725	2,42,618	2 7 7	58,534	4 2 6
4	Sakrand ..	53,499	1,26,992	2 5 11	33,522	3 12 6
5	Moro ..	59,588	1,31,788	2 3 2	34,134	3 13 11
6	Naushahro ..	64,981	1,72,693	2 12 11	71,017	2 8 0
7	Kandiaro ..	56,084	1,36,031	2 6 9	70,205	1 15 0
	Total ..	469,788	11,81,767	2 8 3	418,660	2 13 2

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
			Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Jamrao Canal	Figures not available for the Civil District.	201,610		67,203	40,706	13,699	54,405
2	Mehrabwah		64,996		12,935	6,464	218	6,682
3	Nasrat Canal		310,448		60,790	57,646	1,890	59,536
4	Naulakhi		154,959		45,200	38,695	5,329	44,024
5	Dambro		41,872		13,100	10,955	1,286	12,241
6	Dad Canal		352,349		92,208	69,756	8,054	77,810
7	Ren Distributary— Ex: Dad. ..		40,608		11,285	6,815	637	7,452
8	Ren Wah		90,500		20,150	242	65	307
9	Akbbar Kacheri ..		49,603		12,500	8,249	429	8,778
10	Great Marak		171,630		55,000	55,094	3,883	58,977
11	Gharo Mahmudo ..		57,380		24,900	18,719	2,057	20,776
12	Other Canals		119,157		62,350	7,623	2,694	10,316
	Total ..		1,655,241		487,433	320,963	40,291	361,254

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Nawabshah	Maximum 1916 ..	0·07	..	..	..	..	0·26	0·39	17·88	0·11	..	..	0·08	18·71
		Minimum 1918 ..	..	..	..	0·01	0·05	..	..	0·05	..	..	..	..	0·16
		Average ..	0·05	0·12	0·10	0·05	0·31	0·40	0·60	7·85	0·89	..	..	0·05	9·42
		Rainfall for 1922-23 ..	0·10	0·15	..	..	..	..	..	2·06	0·47	..	..	..	2·78
2	Sinjhoro	Maximum 1917 ..	..	..	0·24	0·16	0·60	..	0·17	9·55	4·86	..	..	..	15·58
		Minimu a 1920 ..	0·04	0·50	0·04	0·04	0·05	..	..	0·13	..	..	..	0·02	0·78
		Average ..	0·03	0·11	0·09	0·15	0·15	0·27	0·92	2·75	0·79	0·07	..	0·10	5·43
		Rainfall for 1922-23 ..	0·05	0·05	..	..	0·18	..	0·20	1·34	0·14	..	..	..	1·96
3	Shahdadpur	Maximum 1917 ..	..	..	0·02	0·03	0·60	..	0·02	9·92	4·77	..	..	..	15·36
		Minimum 1899 ..	..	..	..	..	0·29	..	..	..	..	..	..	..	0·29
		Average ..	0·03	0·14	0·16	0·16	0·24	0·20	0·66	2·73	0·78	0·01	..	0·07	5·18
		Rainfall for 1922-23 ..	0·03	0·32	..	0·10	..	..	0·03	2·30	0·16	..	..	..	2·94
4	Tando Adam	Maximum 1913 ..	..	1·60	..	..	..	0·15	10·53	0·91	5·14	..	0·02	0·42	18·77
		Minimum 1879 ..	..	..	..	..	..	..	0·44	0·44	..	..	..	0·44	0·44
		Average ..	0·04	0·16	0·20	0·02	0·10	0·17	0·45	1·98	0·80	..	..	0·58	4·50
		Rainfall for 1922-23 ..	0·04	0·19	..	..	0·49	..	1·25	1·95	..	..	..	..	3·62
5	Sakrand	Maximum 1916 ..	0·13	..	..	..	0·02	0·12	0·80	21·44	..	..	..	..	22·51
		Minimum 1899 ..	..	..	0·10	0·12	..	..	..	..	..	..	..	..	0·22
		Average ..	0·07	0·15	0·11	0·13	0·19	0·12	0·54	4·78	1·14	..	..	0·07	7·30
		Rainfall for 1922-23 ..	0·05	1·58	..	..	0·50	..	0·20	2·90	0·31	..	..	..	5·54
6	Moro	Maximum 1917 ..	0·10	..	0·28	0·30	1·18	..	..	10·20	6·73	..	..	..	18·79
		Minimum 1918 ..	..	..	0·16	0·02	..	..	..	..	..	..	..	..	0·18
		Average ..	0·06	0·11	0·21	0·15	0·22	0·08	1·86	3·59	1·04	..	..	0·07	7·22
		Rainfall for 1922-23 ..	0·24	..	..	0·05	..	..	0·16	0·10	0·01	..	..	..	0·56
7	Naushahro	Maximum 1917 ..	0·06	0·08	0·33	0·05	0·99	..	..	9·59	9·08	..	..	..	20·18
		Minimum 1918 ..	..	..	0·20	..	..	..	..	..	..	..	..	..	0·26
		Average ..	0·20	0·23	0·21	0·04	0·10	0·35	1·11	1·30	0·56	..	0·02	0·14	4·31
		Rainfall for 1922-23 ..	0·52	0·08	..	..	0·11	..	..	0·18	0·80	..	..	..	1·69
8	Tharu Shah	Maximum 1917 ..	..	..	0·27	0·07	0·40	..	..	6·59	10·60	..	..	..	17·93
		Minimum 1900 ..	..	..	..	..	..	..	..	..	..	..	..	..	0·05
		Average ..	0·05	0·16	0·13	0·07	0·12	0·04	0·53	1·72	1·54	0·02	..	0·04	4·42
		Rainfall for 1922-23 ..	0·36	0·07	..	0·02	..	..	0·13	0·67	0·07	..	..	..	1·32
9	Kandiaro	Maximum 1917 ..	0·03	..	0·19	0·12	1·02	..	..	6·95	9·11	..	..	..	17·47
		Minimum 1899 ..	..	..	..	..	..	0·45	..	..	..	..	..	..	0·45
		Average ..	0·05	0·10	0·13	0·07	0·20	0·34	0·66	1·51	1·40	0·01	..	0·07	4·52
		Rainfall for 1922-23 ..	0·15	..	..	..	0·35	..	..	0·71	0·11	..	..	..	1·32

Temperature Details (Nawabshah).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	73	83	87	102	109	107	99	96	85	96	82	76
	Mean minimum ..	50	54	59	79	86	90	86	83	80	77	68	59
	Absolute maximum ..	78	85	96	106	115	116	110	102	98	98	86	81
	,, minimum ..	48	51	54	62	84	84	80	78	78	73	60	54
1914	Mean maximum ..	79	76	90	100	109	104	101	102	102	98	92	79
	Mean minimum ..	59	64	69	79	88	87	88	84	84	78	72	56
	Absolute maximum ..	96	83	100	111	116	112	109	106	108	103	98	90
	,, minimum ..	56	52	63	69	82	84	80	80	79	72	65	49
1915	Mean maximum ..	80	82	93	98	109	111	107	104	101	100	92	82
	Mean minimum ..	56	61	62	76	88	88	88	86	86	80	78	61
	Absolute maximum ..	89	88	107	111	114	112	118	108	106	104	98	93
	,, minimum ..	49	55	63	72	84	82	81	82	79	75	64	53
1916	Mean maximum ..	80	82	97	103	108	111	105	97	97	95	82	81
	Mean minimum ..	60	62	78	84	88	91	88	85	82	77	61	54
	Absolute maximum ..	94	91	104	107	113	115	109	106	101	99	89	84
	,, minimum ..	58	49	71	79	79	82	86	79	79	67	53	53
1917	Mean maximum ..	77	85	91	98	101	107	104	95	94	92	75	67
	Mean minimum ..	56	62	68	78	82	88	86	82	81	74	63	57
	Absolute maximum ..	80	94	95	102	108	112	108	105	97	98	85	72
	,, minimum ..	52	54	63	71	78	84	83	74	78	67	58	52
1918	Mean maximum ..	68	72	82	98	106	106	105	103	99	100	89	78
	Mean minimum ..	56	54	74	82	86	86	84	83	79	77	66	58
	Absolute maximum ..	72	83	89	106	112	111	110	105	102	103	79	84
	,, minimum ..	53	54	68	76	83	83	81	80	75	73	58	51
1919	Mean maximum ..	75	82	86	92	103	107	101	99	100	98	87	77
	Mean minimum ..	55	62	69	74	90	90	89	87	81	79	67	59
	Absolute maximum ..	81	88	90	97	110	113	107	103	105	103	93	83
	,, minimum ..	48	51	64	69	86	85	84	82	78	70	64	53
1920	Mean maximum ..	75	73	85	92	96	105	96	95	94	92	86	70
	Mean minimum ..	61	59	76	82	88	90	88	84	83	81	71	60
	Absolute maximum ..	79	85	95	96	100	106	103	97	97	99	88	78
	,, minimum ..	52	51	69	74	84	88	84	79	80	76	62	54
1921	Mean maximum ..	76	82	94	100	103	103	90	Details not available				70
	Absolute maximum ..	86	92	100	103	109	107	95					78
	,, minimum ..	52	61	66	72	85	87	66					59
1922	Mean maximum ..	69	75	84	102	106	108	105	101	102	98	84	78
	Absolute maximum ..	81	95	96	106	90	91	91	87	84	86	72	68
	,, minimum ..	73	80	96	107	114	110	109	106	103	101	98	83
		56	60	63	80	81	88	89	83	80	78	65	60

Prices—Pre-war Normal.

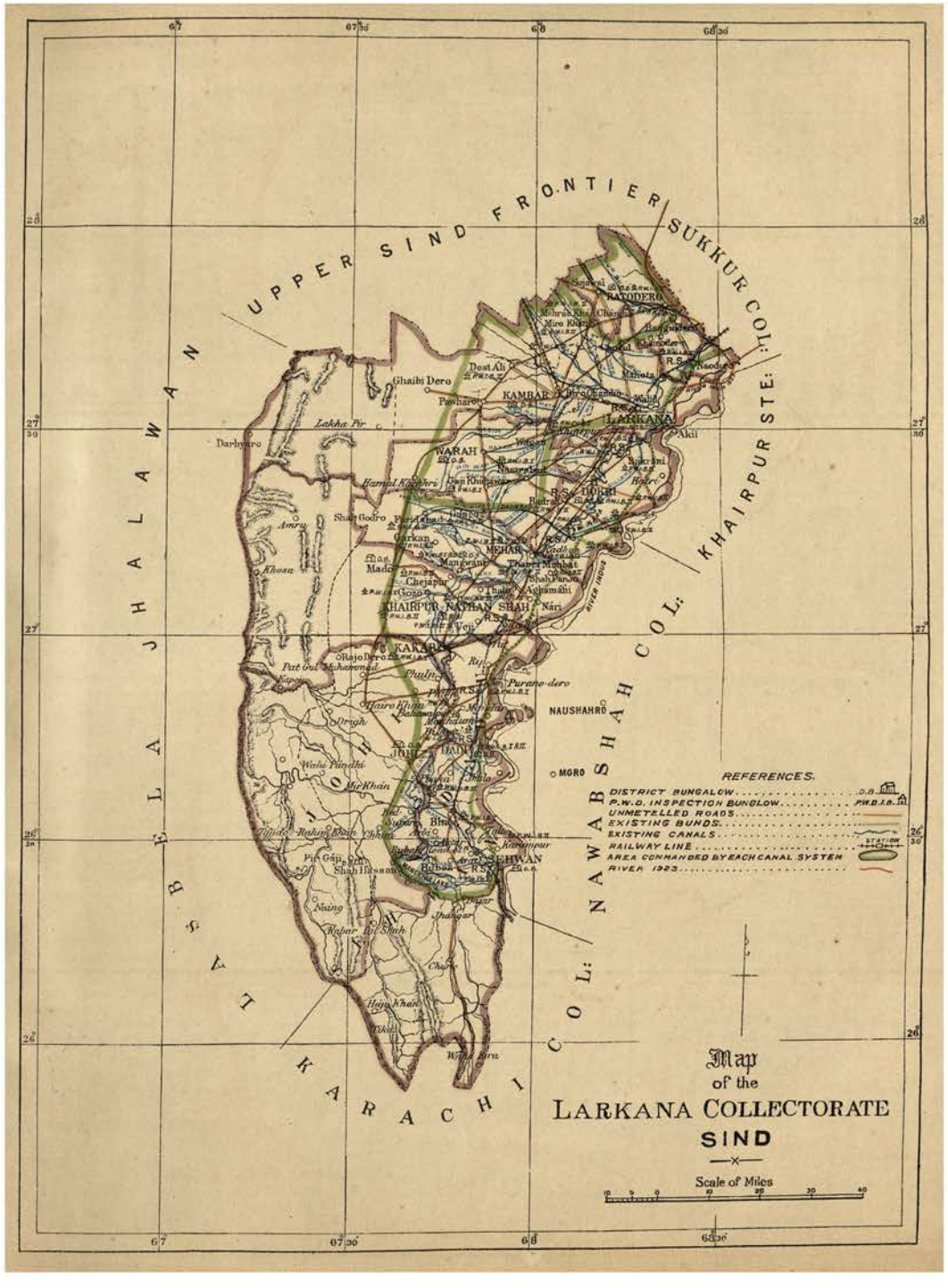
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Mung.	Jowari-Kadhi.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
								Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter taluka.									
1	Nawabshah ..	30	26	12	20	..	..	1 4 6	0 7 0	0 7 2
	Non-headquarter talukas.									
2	Sinjhoro ..	25	23	12	22	104	98	1 2 6	0 7 7	0 7 10
3	Shahdadpur ..	37	32	15	21	300	300	1 3 2	0 7 7	0 8 2
4	Sakrand ..	28	25	13	16	209	225	1 3 5	0 7 2	0 8 3
5	Moro ..	28	26	12	20	195	203	0 14 10	0 6 5	0 6 7
6	Naushahro ..	27	25	16	17	52	57	1 1 2	0 7 2	0 7 6
7	Kandiaro ..	29	27	13	17	90	..	1 0 7	0 6 5	0 6 5
	Average of the non-headquarter towns..	29	26	14	19	160	176	1 1 2	0 7 1	0 6 11

Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Mung.	Jowari-Kadhi.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
								Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter taluka.									
1	Nawabshah ..	23	19	5	17	240	..	2 8 0	0 14 0	0 14 0
	Non-headquarter talukas.									
2	Sinjhoro ..	19	18	10	..	117	117	1 4 0	0 10 0	0 12 0
3	Shahdadpur ..	25	20	9	15	115	147	1 2 5	0 12 9	1 1 4
4	Sakrand ..	26	22	9	16	162	150	1 2 9	0 10 0	0 10 0
5	Moro ..	28	22	8	16	213	317	1 1 9	0 10 0	0 10 0
6	Naushahro ..	25	20	10	15	92	92	1 2 0	0 12 0	0 10 4
7	Kandiaro ..	28	21	11	9	125	..	1 1 2	0 10 0	0 8 0
	Average of the non-headquarter towns..	24	20	9	14	137	169	1 1 3	0 10 9	0 8 13 5

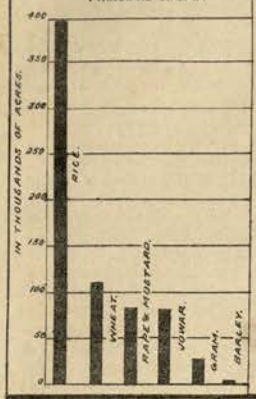
Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

Month.	1911-12. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
							No Famine Relief Works opened.											
Average for the period ..																		


UPPER SIND FRONTIER
SUKKUR COL:
KHAIRPUR STE:
NAWABSHAH COL:
KARACHI COL:
LASBELA JHALAWAN
RATODERO
KAMBAR
LARKANA
WARAH
DOKRI
MEHAR
KHAIRPUR NATHAN SHAH
KAKARO
NAUSHAHRO
MORO
SEHWAN
Ghaibi Dero
Dost Ali
Pasharo
Lakha Pir
Darbyaro
Shah Godro
Amru
Khosa
Mado
Chejapur
Gozo
Rajo Dero
Pat Gul Muhammad
Phulu
Purano-dero
Hairo Khan
Dadu
Wahi Pandhi
Mir Khan
Bhiro
Karimpur
Shah Hassan
Naing
Kabar Dil Shah
Jhangar
Chure
Hajo Khan
Tiku
Wind Igra
RIVER INDUS
REFERENCES.
DISTRICT BUNGALOW
P.W.D. INSPECTION BUNGLOW
UNMETELLED ROADS
EXISTING BUNDS
EXISTING CANALS
RAILWAY LINE
AREA COMMANDED BY EACH CANAL SYSTEM
RIVER 1923
STATION
Map
of the
LARKANA COLLECTORATE
SIND
Scale of Miles
10 5 0 10 20 30 40
67
67 30
68
68 30
28
27 30
27
26 30
26

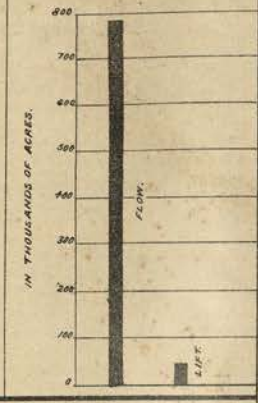
LARKANA DISTRICT.

RELATIVE AREA OF PRINCIPAL CROPS.



AREA UNDER IRRIGATION.

RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



AREA UNDER CROPS.

JOWAR. ONE DOT = 100 ACRES.

RICE. ONE DOT = 1000 ACRES.

WHEAT. ONE DOT = 100 ACRES.

LANG. ONE DOT = 100 ACRES.

RAPE & MUSTARD. ONE DOT = 100 ACRES.

JAMBHO. ONE DOT = 100 ACRES.

NUMBER OF CATTLE.

1909-10

ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.

LARKANA

POSITION AND AREA

The district of Larkana lies between 25° 53′ and 28° north latitude and 67° 11′ and 68° 33′ east longitude and covers an area of 5,052 square miles. It is bounded on the north by the Upper Sind Frontier district and the Sukkur district; on the east by the river Indus, on the west by the Territory of His Highness the Khan of Kalat and at the south it narrows considerably and intrudes into the Karachi district.

PHYSICAL FEATURES

The district may be divided into two parts which are entirely dissimilar in character, *viz.*: (1) the Kohistan or hilly-country and (2) the low lands which lie between the Kohistan and the Indus. *The Kohistan* consists of a range of lime stone hills or mountains generally known as the Khirthar range running from north to south and forming the western boundary of the district. The range varies from five thousand feet in the north to less in the south. The highest ridge forms the boundary between Sind and Baluchistan. Bleak, rugged and barren as these hills look, they afford pasturage for large flocks of sheep and goats. The valleys are green with grass after rain and admit of cultivation up to a height of four thousand feet. The torrent beds are industriously dammed for purposes of irrigation.

Between the hills and the Indus the country may properly be described as a broad shallow. By this depression the hill torrents and the waters of the Western Nara all find their way to the Manchur Lake and thence by the Aral to the Indus.

The northern part of the district used to be subject to the Indus flood or 'lets'. The river bunds have now successfully grappled with this danger and for the last forty years the safety of the country has been practically assured. The result has been that cultivation has developed unhindered and the district produces luxuriant crops of rice, wheat and other grains.

Besides the Khirthar range already noted above, the only hills of any importance are the Lakhi range and the Jatil hills running just outside the boundary south-west from Sehwan to Duba.

The Indus flows for about one hundred and fifty miles along the eastern boundary of the district. The Western Nara, which is a natural river artificially improved, is better known as the Western Nara Canal, the largest canal in the district. The Irak river, rising in the Hathul hills between Karachi and Sehwan, after a south-easterly course of about forty miles, falls into the Kinjhar lake, while the Aral is one of the main channels by which the waters of the Manchhar lake are discharged into the Indus. The Nai-Gaj which is the principal of the hill torrents or *nais* takes its rise in Baluchistan and enters the district in the south of Kakar.

CLIMATE

The climate is, next to that of the Upper Sind Frontier, the severest in the Province. The great heat of the summer months is little mitigated by even such breezes as visit Sukkur from off the river at night while the ubiquitous canals and general submergence of the country add moisture to the heat and bring mosquitos as a further trial. Dust storms also are not unknown and fierce hot winds are common during the '*chaliho*' the forty days preceding May 15th. The temperature varies from a maximum of 120° in May to a minimum of 35° in January which means frost under the open sky. The cold season which begins in November is delightful as elsewhere in Upper Sind.

RAINFALL

The mean rainfall is a little less than five inches but it varies a good deal. The maximum recorded during the past forty-five years was 23·75 inches at Johi in 1878 and the minimum 16 cents at the same station in 1918. The distribution of rain in the district is, upon the whole, fairly uniform, the talukas near the river receiving a little more than their share and those to the north-west a little less.

PECULIAR FEATURES OF EACH TALUKA

With the exception of the western portion which is mountainous, the general aspect of the district is that of a flat plain intersected by canals. The southern portion differs in some respects from the remainder in being more hilly and containing Manchhar lake in it. The agricultural conditions of the plains are alone of importance. The soil, crops and methods of cultivation as prevailing in the different talukas of the district are noted as follows :—

Larkana.—This taluka may be divided into two parts, one, that between the river Indus and the protective bunds, and the other, on the further side of these bunds. The former tract is liable to the action of the river, and *rabi* crops, especially wheat, are for the most part grown. The latter forms part of the richest and best cultivated land in Sind. The cultivation is almost entirely by flow and rice is the predominent crop.

Kambar.—This is one of the finest and most fertile talukas in Sind. At the same time the contrasts in soil are of a somewhat startling character. To the west of the chief town, Kambar, is an extensive plain of salt land as bad as any in Sind. The western portion of the taluka within the Ghaibi Dero Jahgir is hilly, depending for its water-supply on hill streams and on rain. The remainder of the taluka contains the best rice lands in the Province. The cultivation is exclusively by flow.

Labdarya.—Though not quite so fertile as Larkana and Kambar talukas, it nevertheless produces very rich crops. The area cultivated by flow is ninety-six per cent. of the whole. Between the river bund and the river the *Kachas* are extensively cultivated with wheat and other *rabi* crops. Trees grow extremely well and mango groves and gardens are more numerous in this taluka than anywhere else in the district.

Ratodero.—This is an alluvial tract of land, the most fertile portion being between Naodero and Ratodero. The irrigation facilities to the north of the taluka are somewhat poor. A considerable area is also subject to the action of the river Indus. Over ninety per cent. of the cultivation is by flow.

Mirokhan.—Large tracts in this taluka are full of *Kalar* and sand and are uncultivated in consequence. The cultivation is almost entirely by flow.

Mehar.—This taluka is formed of a narrow long strip of land stretching from the river Indus on the east to the Kohistan hills along the western boundary. That portion between the river and the Nara is mostly high-lying and supports dry crops. The other portion on the right bank of Nara has a general fall towards the depression which leads the drainage of the district southwards and then rises again to the open and elevated plain at the foot of the hills. About ninety-four per cent. of the cultivation is under flow and the remainder under lift.

Kakar.—This taluka contains a very large area of hilly ground. The cultivable portion is somewhat similar to that of its neighbour Mehar. The bulk of the cultivation is under flow.

Warah.—The eastern portion of this taluka is well cultivated; the western, owing to its irregular supply of water, is chiefly waste. Almost all the cultivation is under flow.

Sehwan.—This taluka may be divided into three sections: (1) land irrigated by the Indus and the Manchhar Lake, (2) land dependent upon rain and (3) mountainous tracts. The alluvial portion is situated in the north and is divided from the mountainous tract and the *barani* land by the road which runs from Sehwan to Jhangar and Shah Hassan. It is irrigated by the Western Nara and other canals. Much *rabi* cultivation is done on the Manchhar.

Johi.—This taluka is divided into two distinct portions—one, the alluvial plain of the Indus Valley and two, the Kohistan. The road between Phulji and Johi roughly marks the dividing line between the two tracts. The western tract is called the '*Kacha*' to distinguish it from Sind, *i.e.*, the alluvial portion of the Indus Valley. The '*Kacha*' depends for its cultivation on rain and floods from the *nais* or hill torrents. The rest of the taluka is irrigated by Western Nara and its branches.

Dadu.—This taluka is a narrow tract of alluvial land, the river forming its eastern boundary and the Western Nara its western. Flow cultivation is only about one-third of the whole.

CROPS

The principal crops grown in the district are :—

A.—Kharif crops.

Rice is the staple crop of the district. It is grown most extensively throughout the district except in the south. The chief variety produced is the white called 'sugdasi.'

Jowar is one of the main food crops of the district and is grown in every taluka. Two varieties, white and red, are cultivated.

Bajri is grown to a small extent everywhere.

Sesame is cultivated on a small scale in every taluka but chiefly in Ratodero and Johi.

B.—Rabi crops.

Wheat is grown in every taluka of the district on lands which have been submerged by the spill of a canal (*sailabi*) or on lands which have been given a flooding towards the end of the inundation (*bosi*). Only the white varieties are grown of which the best known are *Gaj* and *Thori*.

Rape and Jambho.—The area cropped with rape is large in Kakar, Kambar, Mehar and Warah talukas only. *Jambho* is grown in every taluka.

Gram and chickling vetch are grown as second crops in rice lands throughout the district and as *rabi* crops in the riverain *Kacha* tracts.

C.—Vegetables.

The indigenous vegetables in common use are cultivated in every taluka and European vegetables of different kinds are grown during the cold season in the various Local Fund Gardens.

Normally, rice occupies about four lakhs of acres, wheat one lakh, *jowar* eighty thousand and *bajri* two thousand acres. Among pulses, *lang* (chickling vetch) occupies from one and a half to two lakhs of acres and gram about twenty-five thousand acres. Among oilseeds, the most important are *jambho* and rape and mustard covering about forty thousand acres each. The area under sesame rarely exceeds three thousand acres.

CATTLE

The total number of cattle which amounted to nearly four lakhs, at the cattle census of 1915-16, was reduced to less than three lakhs in 1919-20 presumably owing to the severe famine of 1918-19. Of the total cattle, roughly one lakh are plough cattle, a lakh and a half milch cattle and the rest young stock. The camel is the most useful of the domestic animals and is bred to a considerable extent in the south. Large numbers of *dumba* or fat tailed sheep are pastured on the western hills. In Sehwan, there are two varieties of sheep, of which one is remarkable for having four horns.

FORESTS

There are one hundred and two square miles of forest in the district. The conditions of tree growth are similar to those of the Sukkur district. Large areas of forest which now receive little or no water owing to the construction of the protective bunds will, under the Sukkur Barrage Canals project, receive ample water in the future. There is a considerable local demand for all classes of forest produce, and excess stocks are transported by rail to Quetta and elsewhere. As is the case elsewhere in Sind, the riverain forests produce food and shade to the starving cattle in years of scarcity when animals are brought from long distances both from the hills in the west and from the Thar desert in the east.

IRRIGATION

The main irrigation systems of the district are the Ghar canal, the Sukkur canal and the Western Nara.

1. *Ghar canal.*—It is evidently a natural channel some centuries old and fed by the River Indus. The length of the main canal is forty miles. It takes off from a *dhandh* about thirty miles south of Sukkur and traverses Ratodero and Larkana talukas. In 1855 a new feeder called the Fordwah was constructed direct from the river joining it at its twenty-fifth mile from the head. The bed-width of the canal at head is one hundred feet with a full supply depth of twelve feet and a half; its average discharge is seven thousand cubic feet per second. Its important branches are the Shah Hamir, Hurshah, Kur Dato, Nurwah and Naurang. The Nasrat, now an independent canal, forms part of the Ghar system. The chief crop on this canal and its branches is rice and the whole cultivation is by flow.

2. *Sukkur canal.*—The canal was constructed between 1865 and 1870. It takes off from the Right Bank of the Indus immediately above the island of Bukkar and after a course of thirty-nine miles through the Sukkur and Garhi Yasin talukas, traverses the Ratodero taluka for twenty-one miles and finally, at its sixty-fourth mile in the Shahadadkot taluka, it bifurcates into the Kur Maksudo and Napat Sukkur. Owing to the failure of this head (now called the old head) in 1872 a new head called the Rahuja Head was constructed two miles in length. This head joins the main canal and is the only safe source of supply to the canal during the *Kharif* season. The old head is always kept closed and is opened for *rabi* cultivation only when Bukkar reads below six feet. The canal is fifty feet wide at the head with a full supply depth of thirteen feet. The average discharge passing down it is two thousand and three hundred cubic feet per second. Like the Ghar, the chief crop on it is rice. The more important branches of the canal are the Kur Khairo and the Kur Biro.

3. *Western Nara.*—The most important canal of this system, besides other direct cuts, namely, the New Feeder and the Pritchard and other river canals, is a natural and very tortuous channel by which a portion of the Indus waters formerly found their way to the Manchur lake and back again into the river near Sehwan *via* the Aral and Dunster. It takes off at present from the River near the village of Abad. To secure an adequate supply to the canal it was found necessary to excavate in 1902-03 a new mouth to it higher up, forty-feet wide called the Akil mouth which was subsequently enlarged to one hundred and twenty-five feet in 1905. The canal traverses the greater part of the Larkana district. The full supply depth of the canal at head is thirteen feet and average discharge passing down it is about five thousand cubic feet per second. The length of the main canal up to the Manchur lake is one hundred and fifty-six miles and its more important branch is the Dhamrao. The New Feeder and Pritchard canals are feeders to the Western Nara completed in the nineties, joining it in the thirty-third and ninety-fifth miles, being respectively eight and twenty-nine miles long. The cultivation along this system is mostly rice.

PROTECTIVE EMBANKMENTS

Ghar Bunds consist of the Saidabad, Jhali, Mitho and Phulu Bunds. The total length of these is forty-five miles.

Western Nara Bunds consist of several lengths of bunds, with various names, measuring in all one hundred and seven miles.

DRINKING WATER

In towns and big villages pakka wells are constructed which give sufficient drinking supply. In mofussil, however, where such wells are very rare, ample supply can be had from canals and *karias* in the inundation season, and in winter Kacha wells are sunk by the people of the village.

INDUSTRIES

The manufactures include coarse cotton cloth, carpets, rugs, mats, salt, metal-work, shoes, native saddles and other leathern goods; dyeing is also an important industry. Bubak is the chief centre of carpet manufacture; but both carpets and saddle bags, worked by Baloch and Brahui women, are imported from Kalat and sold in the Johi and Sehwan talukas. Native saddles are manufactured in Larkana and cotton *lungis* in Sehwan. There are a number of rice-cleaning factories in the district situated chiefly at Larkana town, Ratodero, Kambar and Nasirabad.

TRADE

The district has an extensive trade, the exports comprising grain of all sorts, wool, cotton and other agricultural products, and the imports being English piece-goods, silks and fruits. Larkana town is one of the chief grain marts of Sind.

COMMUNICATIONS

The Railway facilities for import and export are ample in the district. The North-Western Railway runs through the district from Nasrat station in the Ratodero taluka to Sehwan. Besides this, the first section of the Larkana-Jacobabad Light Railway was started very recently and runs from Larkana to Behram station (in Mirokhan taluka of this district) and then on to the Upper Sind Frontier district.

During the inundation, the Ghar and the Western Nara and their branches are navigable and boats regularly ply on them. The road communications of the district are on the whole excellent and though outside the town of Larkana no road is metalled, they serve traffic that plies upon them quite satisfactorily.

RELIGION

The total population of the district 597,960 is composed of 499,553 Musalmans, 98,336 Hindus, 59 Christians, 2 Parsis and 10 persons belonging to various sects or castes.

LANGUAGES

Sindhi is the vernacular of the district and is spoken by 80·7 per cent. of the population. Balochi is used by 8·3 per cent. while Siraiki and Jatli are spoken by 7·0 per cent. The only other language of any importance is the Brahui spoken by nearly three per cent. of the population.

OCCUPATIONS

Speaking broadly 406,633 persons or 68·0 per cent. of the population are dependent for their livelihood on Agriculture, 41,557 persons or 6·9 per cent. are supported by Industry. Commerce supports 60,594 persons or 10·1 per cent. and the Professions and the Liberal Arts 8,774 persons or 1·5 per cent. The remainder of the population consists of 80,402 persons or 3·4 per cent. who have to follow various other occupations for their livelihood.

ECONOMIC CONDITION

The bulk of the population is agricultural, Musalmans constituting the majority. The *zamindars* are fairly well off except in Sehwan and Johi talukas but not so the *haris* who are uneducated and improvident and are usually in debt to *zamindar* and *bania*.

The relations between the *zamindars* and *haris* are good. The labouring class, skilled and unskilled, is faring well. Wages remain high despite fall in the level of prices.

Hindus are found in large numbers in towns and in small numbers in villages. Their general occupation is trade. But now their tendency towards land-holding is increasing.

The big industrial town in the district is Larkana proper though some other talukas also boast of some rice husking factories where a good number of labourers are employed.

LIABILITY TO FAMINE

No area in the district is liable to famine. In the Kachho tract, which wholly depends upon rains and hill-torrents, the people are hard-hit if there are not sufficient rains but in that case they move down to irrigated tracts of this and the other districts of Sind, especially the Jamrao tract, where ample labour, agricultural and industrial, awaits them. A portion of the Kachho tract in Johi taluka consisting of *tapas* Vahi-Pandhi, Bakhir Shahid, Tando Rahimkhan and Pir Gaji Shah, can only be cultivated when there are very heavy rains. But this area too cannot be said to be liable to famine.

FORECAST OF RELIEF WORKERS

Relief works have never been opened in this district nor there seems any need of them. The district is not liable to famine and no forecast can be made.

LARKANA STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Population (1921). Density per square mile.	Land Revenue. Rs.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage column 10 on column 9.	Area uncultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallow.	Total.	Area unavailable for cultivation. Available for cultivation.	Forest.	Other.	Total.	Irrigation. Area irrigated from Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowari.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
1	Larkana ..	60	218	1	..	60	219	78,883	361	3,75,038	60	139,724	100	75,890	21,466	97,356	18,759	1,697	21,912	42,368	69,692	..	..	..	6,198	75,890	55,165	8,647	..	3,996	46	1,319	78	2,511	4,479	26,241	351	75,890
2	Lakdarya ..	63	326	..	..	63	326	68,764	210	2,66,013	63	208,692	100	90,705	10,310	81,215	34,737	95,783	54,057	125,477	50,397	..	..	..	338	50,735	31,857	7,385	51	3,341	418	97	2	1,750	4	284	50,889	184	50,705
3	Mehar ..	65	323	..	2	66	327	54,490	166	3,07,520	66	209,389	100	56,044	13,380	43,098	113,030	54,591	3,543	33,225	90,359	55,294	..	..	1,260	56,544	42,827	1,485	320	10,740	138	100	..	950	3	420	56,547	..	56,544
4	Dadu ..	55	297	..	..	55	297	45,892	155	1,56,953	55	194,620	100	31,061	15,790	53,188	100,047	44,085	2,813	47,623	94,523	27,707	..	2,060	1,294	31,061	11,941	5,023	100	12,707	507	596	..	74	5	241	31,244	183	31,061
5	Sehwan ..	67	269	1	9	68	278	41,333	33	70,269	68	814,236	100	14,444	17,852	71,653	103,949	360,955	9,429	339,903	710,287	13,246	..	..	1,198	14,444	4,032	4,972	100	4,956	141	6	32	111	17	398	14,644	..	14,444
6	Johi ..	95	704	6	51	101	755	32,079	43	90,151	101	482,984	100	27,750	22,278	228,290	278,778	120,621	..	83,385	204,006	27,796	..	..	454	27,750	13,738	6,340	214	6,348	226	443	..	187	12	420	27,848	98	27,750
7	Kakar ..	75	444	1	1	76	445	44,214	98	2,01,282	76	286,422	100	56,655	14,794	113,811	185,260	94,900	..	101,169	196,069	35,671	..	988	..	36,659	25,053	2,106	48	5,900	54	41	18	957	231	36,561	2	36,659
8	Kambar ..	54	202	9	271	63	473	77,446	163	3,88,629	63	303,065	100	75,525	3,996	175,335	254,856	29,454	..	22,755	48,209	75,525	..	..	..	75,525	73,124	273	..	1,998	111	..	..	1,441	..	608	39	160	67,018	1,495	75,525
9	Ratodero ..	63	231	..	2	63	233	52,512	225	2,34,756	63	149,268	100	54,150	..	23,957	80,107	31,448	6,629	31,084	69,161	50,775	..	178	3,197	54,150	32,239	7,348	23	6,552	259	2,066	121	1,003	4	4,820	54,332	182	54,150
10	Mirokhan ..	70	288	..	..	70	288	44,163	153	3,09,745	70	184,259	100	62,991	..	19,221	82,173	51,864	..	30,723	102,587	62,940	..	11	..	62,951	45,251	9,443	3	5,512	127	183	19	882	4	1,490	63,403	452	62,951
11	Warah ..	66	368	3	50	69	418	58,179	140	3,67,744	69	267,406	100	76,683	..	133,125	67,255	..	..	67,026	134,281	76,628	..	55	76,683	62,893	2,560	36	5,278	54	4,683	4	331	..	696	76,683	..	76,683
	Total ..	733	4,668	21	389	754	5,057	597,960	118	27,66,500	754	3,240,565	100	562,262	99,227	830,302	1,491,891	911,715	59,894	777,061	1,748,674	545,131	..	..	3,237	13,994	562,362	399,956	57,932	527	71,028	1,981	..	10,977	165	9,364	56	13,645	565,631	3,269	562,362

Irrigation Abstract, 1922-23.

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Population (1911). Density per square mile.	Land Revenue. Rs.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage column 10 on column 9.	Area uncultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallow.	Total.	Area unavailable for cultivation. Available for cultivation.	Forest.	Other.	Total.	Irrigation. Area irrigated from Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowari.	Bajri.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
1	Larkhana ..	60	215	..	1	60	219	100,798	390	2,64,654	60	139,723	100	51,448	6,647	37,870	95,965	20,634	1,697	21,427	43,758	51,448	..	..	..	51,448	47,002	4,329	..	..	..	..	..	4,143	48	1,627	299	51,448	..	51,448
2	Lakdarya ..	63	326	3	50	66	376	69,981	215	2,09,923	63	209,325	100	40,000	6,421	34,021	81,398	14,635	5,912	54,556	75,103	35,271	..	..	5,529	40,800	24,062	3,542	..	..	..	..	..	6,595	6	572	539	41,076	276	40,800
3	Mehar ..	70	286	..	..	70	288	58,221	178	1,99,728	66	209,325	100	46,421	66	65,240	111,727	60,234	3,343	33,821	97,398	43,929	..	..	2,492	46,421	30,972	6,286	..	..	..	..	..	18,529	..	519	4,269	60,556	14,135	46,421
4	Dadu ..	55	300	..	..	55	300	54,627	184	1,20,743	55	192,650	100	26,579	10,958	63,515	101,052	40,685	2,815	47,500	90,998	17,582	..	..	8,402	25,984	8,537	5,040	..	..	..	..	..	8,415	..	872	195	26,378	394	25,984
5	Sehwan ..	67	271	1	3	68	274	52,901	42	56,505	68	814,227	100	18,850	..	85,103	103,953	355,643	9,429	345,202	710,274	13,200	..	430	5,220	18,850	2,245	7,030	..	..	..	..	..	9,415	..	872	1,041	31,511	561	18,950
6	Johi ..	95	703	8	51	103	754	30,183	68	60,918	101	482,985	100	15,492	11,525	251,017	278,184	110,644	..	94,237	204,881	15,292	..	200	..	15,492	9,169	2,966	..	..	..	..	..	1,184	..	96	232	13,492	..	15,492
7	Kakar ..	75	444	..	1	76	445	47,244	105	1,25,040	76	286,373	100	24,100	7,442	184,957	196,961	167,108	95,854	..	262,962	1,405	1,158	29,165	..	31,728	15,259	2,722	..	..	..	..	..	5,308	..	478	312	24,113	..	24,105
8	Kambar ..	54	202	9	271	63	473	91,751	147	3,32,804	63	303,061	100	66,688	..	184,517	251,205	28,784	..	23,072	51,856	66,688	..	..	..	66,688	60,587	6,733	..	..	..	..	..	25,979	..	622	7,076	100,997	34,309	66,688
9	Ratodero ..	63	223	2	2	63	225	77,988	345	1,81,426	63	149,269	100	39,912	2,849	36,809	79,570	27,402	6,629	35,468	69,499	39,322	..	590	..	39,912	36,988	8,355	..	..	..	..	..	4,215	10	589	61	50,138	4,000	46,138
10	Mirokhan ..	70	288	..	..	70	288	Not available.		1,99,728	70	184,758	100	45,543	..	36,334	81,877	52,113	..	50,768	102,881	45,857	..	281	..	46,138	27,394	6,022	..	..	..	..	..	5,738	15	491	812	40,472	560	39,912
11	Warah ..	66	367	3	50	69	417	57,129	137	2,70,039	69	267,336	100	54,704	1,038	73,069	128,811	72,781	..	65,744	138,525	54,704	..	..	..	54,704	49,515	879	..	..	..	..	..	3,492	..	289	..	53,924	1,438	54,704
	Total ..	733	4,621	21	387	754	5,008	660,879	131	20,46,723	754	3,237,788	100	430,542	49,352	1,003,056	1,482,950	899,409	59,923	795,506	1,754,838	404,275	..	..	2,966	22,801	430,542	303,650	61,918	..	..	..	..	97,689	876	6,197	..	15,254	484,795	54,253	430,542

Irrigation Abstract, 1918-19.

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse-grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Lang.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesamu.	Linseed.	Rape and Mustard.	Niger-seed.	Jambhlin.	Cocoanut.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Net area cropped.	Remainder cropped.	Percentage of net area cropped.
1	Larkana ..	Acs. 3,696	Acs. 46	Acs. 55,162	Acs. 10,797	Acs. 44	Acs. ..	Acs. 69,748	Acs. ..	Acs. 1,595	Acs. 21	Acs. 26,806	Acs. 120	Acs. 28,522	Acs. 52	Acs. 1,333	Acs. 3,528	Acs. 4,913	Acs. 57	Acs. 15	Acs. 72	Acs. 28	Acs. ..	Acs. 1	Acs. ..	Acs. ..	Acs. ..	Acs. ..	Acs. 1	Acs. 2	Acs. 3	Acs. 3	Acs. 6	Acs. 142	Acs. 113	Acs. 373	Acs. 483	Acs. 26,990
2	Lakdarya ..	7,341	418	31,522	14,714	95	..	54,128	..	1,206	39	18,253	15	19,513	639	483	1,075	2,197	235	..	235	60	2	43	..	1,937	..	2,491	..	4,471	384	..	4	388	3	152	80,768	15,144	61,624
3	Mehar ..	10,748	338	42,807	7,940	418	..	62,060	..	1,666	41	21,590	16	23,313	166	..	166	166	100	..	100	128	..	39	..	1,363	..	3,363	..	4,726	..	..	1	1	4	252	67,263	32,034	35,229
4	Dadu ..	12,707	507	11,941	10,322	1,283	..	36,765	..	2,046	125	9,419	..	11,590	197	2	203	31	31	..	31	8	..	51	143	1,846	..	3,193	..	5,183	..	1	4	5	100	51,913	5,054	46,859
5	Sehwan ..	1,860	141	4,052	13,314	785	..	24,137	..	911	..	2,717	..	3,628	272	3	299	192	59	231	224	32	..	51	..	916	..	1,770	1,604	4,341	..	17	5	22	124	33,059	763	32,296
6	Johi ..	14,941	316	13,230	5,681	307	..	34,475	339	133	1,061	..	..	1,533	40	64	104	228	..	..	228	51	..	763	..	1,204	..	5,524	955	8,443	..	17	5	22	114	55,071	3,043	52,028
7	Kakar ..	2,004	54	26,705	6,896	262	..	40,921	3,049	30	15,072	..	..	18,151	658	..	658	92	92	750	66	..	..	69	72	18	68	..	..	6,601	..	1	4	5	277	69,958	18,335	51,623
8	Warah ..	5,278	54	62,899	2,586	59	..	71,049	1,110	..	18,454	..	..	19,564	395	..	395	108	11	351	470	97	..	2	..	651	4	1,003	97	13,445	..	3	..	3	112	100,594	27,859	72,735
9	Kambar ..	1,998	11	73,124	6,338	59	..	80,930	3,516	..	31,749	..	..	35,266	514	40	554	173	727	..	727	2	..	207	..	20	..	6,115	..	10,475	..	3	..	3	112	127,525	48,004	79,521
10	Ratodero ..	6,552	259	32,239	10,678	1,148	..	51,076	3,148	..	12,912	27	88	16,175	1,052	488	1,540	1,488	1,488	..	2,976	29	..	1,000	..	4,154	..	7,183	..	12,366	..	2	..	2	113	75,032	20,852	54,180
11	Mirokhan ..	5,512	127	45,735	12,124	108	..	63,606	3,545	57	15,956	14	19,542	1,168	330	49	1,539	629	..	7	629	19	..	634	..	1,523	..	6,080	..	8,237	..	7	..	7	111	159	95,825	20,852	62,951
	Total ..	81,039	2,065	399,956	108,401	3,718	3	595,182	..	25,678	578	172,609	199	199,063	6,181	1,133	3,025	10,389	1,238	59	1,297	1,847	168	2,843	..	37,240	..	44,920	2,800	87,803	387	57	53	110	1,615	897,861	236,272	661,589		

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse-grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Udid.	Lang.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesamu.	Linseed.	Rape-seed.	Niger-seed.	Jambhlin.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Net area cropped.	Remainder cropped.	Percentage of net area cropped.
1	Larkana ..	Acs. 7,812	Acs. 115	Acs. 41,062	Acs. 15,348	Acs. 82	Acs. ..	Acs. 55,179	Acs. ..	Acs. 865	Acs. 12	Acs. 13,111	Acs. ..	Acs. 13,988	Acs. 908	Acs. 25	Acs. 1,159	Acs. 2,088	Acs. 33	Acs. ..	Acs. 33	Acs. 29	Acs. 68	Acs. 5	Acs. ..	Acs. 4,099	Acs. ..	Acs. 1,936	Acs. ..	Acs. 6,040	Acs. 3	Acs. 11	Acs. 1	Acs. 12	Acs. 23	Acs. 77,493	Acs. 19,398	Acs. 58,095
2	Lakdarya ..	6,231	526	24,961	19,413	149	..	44,893	..	1,665	66	13,141	..	14,872	260	1,041	1,946	320	..	..	320	4	6	15	..	4,452	..	2,161	..	6,617	..	40	..	40	72	59,651	12,124	47,527
3	Mehar ..	8,741	2,231	30,572	6,266	326	..	46,536	..	520	10	8,767	..	9,297	402	2	412	521	3	..	521	3	..	21	..	1,962	..	1,569	..	3,558	354	23	..	377	60	60,622	14,135	46,487
4	Dadu ..	12,958	690	6,557	11,652	2,041	..	33,816	..	1,442	34	3,093	..	4,569	212	..	212	220	..	..	220	3	..	90	..	1,184	..	213	30	518	..	2	9	16	42	39,181	1,646	37,537
5	Sehwan ..	6,508	253	2,245	1,690	840	..	16,676	..	319	10	688	..	1,017	372	9	381	431	151	107	258	152	4	308	..	1,078	157	865	..	2,560	..	3	..	3	..	19,411	561	18,850
6	Johi ..	10,223	59	9,166	5,997	177	..	25,209	..	42	..	615	..	657	49	..	49	142	..	..	142	47	..	392	..	892	334	1,862	..	3,535	..	95	..	95	..	28,099	992	27,067
7	Kakar ..	5,471	59	15,259	5,245	280	..	27,414	5,903	395	20	4,439	..	10,757	395	..	395	503	67	..	67	26	..	3,170	..	3,196	..	3,170	..	6,366	..	5	1	6	..	37,727	6,180	31,547
8	Warah (Naurabad) ..	4,362	5	49,515	2,485	159	..	56,526	559	4	..	11,262	..	11,825	269	..	12	281	3	..	3	8	..	53	..	1,550	..	1,820	..	3,403	..	1	..	2	52	72,100	16,358	55,742
9	Kambar ..	1,919	14	60,587	6,733	11	..	69,264	1,675	..	22,360	..	..	24,035	438	183	622	5	..	..	5	189	..	15	..	3,291	..	3,412	..	6,704	..	1	..	1	177	100,997	34,309	66,688
10	Ratodero ..	5,417	444	27,394	8,707	59	..	41,961	6,092	16	6,097	..	..	7,041	349	25	374	538	259	..	259	29	15	413	..	511	..	1,140	..	1,804	..	42	..	42	25	50,972	8,236	42,761
11	Mirokhan ..	4,351	51	36,908	8,636	13	..	49,959	703	..	6,083	..	..	6,786	542	69	611	273	10	411	694	12	..	229	..	1,695	..	1,879	..	3,574	..	8	..	8	25	59,425	12,888	46,537
	Total ..	69,925	2,367	303,649	86,977	3,917	13	466,848	..	8,651	113	86,095	..	94,859	4,561	469	2,822	7,852	998	107	1,105	809	86	950	..	16,951	..	14,261	521	32,683	362	231	15	246	813	605,663	125,769	479,894		

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For passengers.	Carts. For produce and goods.	Cropped land per pair of plough Cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Larkana ..	4,113	..	160	96	195	..	5,306	9,096	3,786	5,474	26,176	722	5,494	8,730	1,526	259	4,959	..	7	3,011	20
2	Lakdarya ..	11,688	..	8	37	..	..	6,588	9,037	4,266	3,420	35,044	1,080	2,213	13,404	1,420	446	5,923	..	..	2,364	8
3	Mehar ..	10,643	..	66	67	..	..	5,830	5,998	4,488	2,751	29,442	895	13,010	11,951	1,386	348	4,209	..	..	1,800	14
4	Dadu ..	6,916	..	12	38	101	..	9,521	4,829	5,680	1,866	30,958	663	6,607	14,733	1,540	1,379	4,630	..	..	707	5
5	Sehwan ..	5,206	..	260	..	414	..	7,760	1,629	2,711	866	17,851	417	9,104	4,286	1,871	978	2,678	..	..	779	2
6	Johi ..	3,238	..	..	116	..	..	4,933	526	3,642	171	16,938	1,133	7,365	15,090	1,912	2,963	3,468	..	..	59	29
7	Kakar ..	6,064	15	13	19	..	..	5,541	3,606	3,148	551	21,972	908	13,845	11,166	1,596	578	3,954	..	22	200	16
8	Kambar ..	11,012	..	..	13	..	..	6,176	7,970	4,738	2,899	33,918	1,346	9,648	477	2,788	1,915	4,915	..	..	2,723	9
9	Ratodero ..	7,497	5	33	23	133	..	5,042	6,153	3,515	2,207	24,598	633	4,468	7,584	557	630	3,071	..	101	1,932	5
10	Mirokhan ..	7,992	..	165	15	81	..	4,353	5,911	3,076	1,998	24,024	943	9,541	7,462	587	414	3,777	..	4	2,078	5
11	Warah ..	9,752	..	203	7	510	16	6,336	8,129	4,254	3,387	32,596	1,106	8,607	10,638	1,763	833	4,748	..	13	2,428	20
	Total ..	93,412	20	931	314	1,561	21	67,588	62,878	41,715	24,270	293,517	9,846	89,365	104,621	13,499	9,567	47,132	2	56	17,482	19

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. Oxen.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For passengers.	Carts. For produce and goods.	Cropped land per pair of plough Cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Larkana ..	4,726	..	160	96	195	..	5,306	9,096	3,786	5,474	26,176	722	5,494	8,730	1,526	259	4,959	..	7	3,011	20
2	Lakdarya ..	11,688	..	8	37	..	..	6,588	9,037	4,266	3,420	35,044	1,080	2,213	13,404	1,420	446	5,923	..	..	2,364	8
3	Mehar ..	10,643	..	66	67	..	..	5,830	5,998	4,488	2,751	29,442	895	13,010	11,951	1,386	348	4,209	..	..	1,800	14
4	Dadu ..	6,916	..	12	38	101	..	9,521	4,829	5,680	1,866	30,958	663	6,607	14,733	1,540	1,379	4,630	..	..	707	5
5	Sehwan ..	5,206	..	260	..	414	..	7,760	1,629	2,711	866	17,851	417	9,104	4,286	1,871	978	2,678	..	..	779	2
6	Johi ..	3,238	..	..	116	..	..	4,933	526	3,642	171	16,938	1,133	7,365	15,090	1,912	2,963	3,468	..	..	59	29
7	Kakar ..	6,064	15	13	19	..	..	5,541	3,606	3,148	551	21,972	908	13,845	11,166	1,596	578	3,954	..	22	200	16
8	Kambar ..	11,012	..	..	13	..	..	6,176	7,970	4,738	2,899	33,918	1,346	9,648	477	2,788	1,915	4,915	..	..	2,723	9
9	Ratodero ..	7,497	5	33	23	133	..	5,042	6,153	3,515	2,207	24,598	633	4,468	7,584	557	630	3,071	..	101	1,932	5
10	Mirokhan ..	7,992	..	165	15	81	..	4,353	5,911	3,076	1,998	24,024	943	9,541	7,462	587	414	3,777	..	4	2,078	5
11	Warah ..	9,752	..	203	7	510	16	6,336	8,129	4,254	3,387	32,596	1,106	8,607	10,638	1,763	833	4,748	..	13	2,428	20
	Total ..	93,412	20	931	314	1,561	21	67,588	62,878	41,715	24,270	293,517	9,846	89,365	104,621	13,499	9,567	47,132	2	56	17,482	19

LARKANA STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kachha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Tanks. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.		No.	No.		No.	No.	No.	No.	No.	No.	No.	No.	No.	
1	Larkana	12	2,587			1,369	100		1,369	1,369	100					252	
2	Labdarya	9	905			2,826			2,826	2,826	85					617	
3	Mehar	19	1,045			736			736	736	43		2	1		346	
4	Dadu	20	546			1,152	1		1,152	1,152	7			1		436	
5	Sehwan	11	692			162			162	162	50					300	
6	Johi	5	605			145			145	145	84		12			270	
7	Kakar	12	521			645			645	645	44		5			60	
8	Kambar	12	608			574			574	574	133					418	
9	Rato-dero	9	1,264			1,020			1,020	1,020	54			4		73	
10	Mirokhan	9	579			529			529	529	50					407	
11	Warah	20	580			398			398	398	26					80	
	Total	138	9,932			9,556			9,556	9,556	676		19	7		3,759	

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete protect.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
	Canals in Shikarpur Canals District—		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Sind Canal ..	Figures not available for the Civil District.	60	30	30	..	8	8
2	Ghar Canal ..		378,317	321,551	321,551	218,337	146,613	364,050
3	Sukkur Canal ..		60,620	49,359	49,359	39,093	30,018	69,111
4	Western Nara ..		462,690	380,338	380,338	217,786	169,934	388,720
5	Ghar Bunds ..		220	75	75	..	3	3
6	Western Nara Bunds ..		9,793	7,960	7,960	1,581	531	2,112
7	Begari Canal ..		300	125	125	..	..	..
	Total ..		912,000	759,438	759,438	476,897	347,107	824,004

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	5 and up 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Larkana ..	3,304	2,594	606	146	5	6,655	97,013	14·5	54 6 0	3 11 0
2	Labdarya ..	3,236	2,703	637	95	6	6,677	82,195	12·3	40 0 0	3 6 0
3	Mehar ..	2,156	2,644	781	209	15	5,803	112,987	19·5	51 14 0	2 11 0
4	Dadu ..	1,372	2,335	492	136	8	4,344	93,655	22·0	35 9 0	1 10 0
5	Sehwan ..	848	1,958	574	182	18	3,272	98,650	30·1	21 7 0	0 11 0
6	Johi ..	3,446	1,218	1,610	388	22	6,678	223,842	33·5	12 0 0	0 6 0
7	Kakar ..	1,910	3,087	1,044	268	30	6,339	169,196	26·6	31 6 0	1 3 0
8	Kambar ..	3,178	2,484	473	101	8	6,244	129,590	20·7	39 9 0	1 9 0
9	Rato-dero ..	2,098	1,855	464	122	17	4,546	80,107	17·5	31 3 0	2 14 0
10	Mirokhan ..	1,721	1,796	570	130	8	4,225	82,098	19·0	64 0 0	3 4 0
11	Warah ..	2,452	2,636	716	229	10	6,043	101,048	16·7	68 0 0	4 1 0
	Total ..	25,697	25,010	7,972	2,005	137	60,821	1,265,581	21·0	44 6 9	2 8 0

Incidence of Assessment, 1920-21.

Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per head of population including alienations.
	Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
Larkana ..	98,725	3,49,719	3 8 8	78,883	4 6 11
Labdarya ..	82,195	2,98,692	3 10 7	66,764	4 7 3
Mehar ..	71,412	3,01,175	4 3 6	54,490	5 7 10
Dadu ..	49,347	1,51,333	3 1 1	44,364	3 4 8
Sehwan ..	98,060	3,0,124	3 0 15	40,122	4 12 0
Johi ..	50,222	88,478	1 12 2	28,054	3 2 5
Kakar ..	165,198	1,98,955	1 3 3	44,124	4 12 9
Kambar ..	73,364	3,71,722	5 1 0	77,446	4 12 9
Rato-dero ..	55,756	2,28,235	4 1 6	52,502	4 5 7
Mirokhan ..	68,060	2,68,321	3 15 1	44,138	6 1 0
Warah ..	138,928	5,64,396	4 1 0	58,179	9 11 3
Total ..	951,267	28,01,150	3 0 4	592,594	4 9 7

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete protect.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
	Canals in Shikarpur Canals District ..		Acres.		Acres.	Acres.	Acres.	Acres.
1	Sind Canal ..	Figures not available for the Civil District.	117,176		96,830	20,411	14,295	34,706
2	Ghar Canal ..		97		30	..	..	..
3	Sukkur Canal ..		375,822		317,147	173,235	89,396	262,631
4	Western Nara ..		60,620	Figures not available for the Civil District.	49,359	31,899	7,761	39,659
5	Ghar Bunds ..		338,705		266,543	142,276	66,786	209,062
6	Western Nara Bunds ..		220		75	..	..	..
7	Begari Canal ..		10,005		7,963	1,356	217	1,573
			300		125	39	..	39
	Total ..		902,945		738,072	369,215	178,455	547,670

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Larkhana ..	Maximum 1917	0·08	..	0·56	0·05	0·89	..	..	7·85	8·27	..	..	0·03	17·70
		Minimum 1886	..	0·31	..	..	..	..	..	..	..	..	..	..	0·31
		Average ..	0·04	0·15	0·23	0·16	0·17	0·14	0·48	1·59	1·30	0·14	0·01	0·03	4·44
		Rainfall for 1922-23 ..	..	0·56	..	0·02	0·22	..	0·75	..	0·02	..	..	0·36	1·93
2	Labdarya (Dokri) ..	Maximum 1917	0·16	0·02	0·02	0·01	0·80	..	..	7·82	9·26	..	..	0·08	18·09
		Minimum 1922	..	0·16	..	..	..	..	..	0·01	..	..	..	0·03	0·25
		Average ..	0·08	0·14	0·18	0·21	0·15	0·19	0·25	1·61	1·32	0·21	0·01	0·03	4·56
		Rainfall for 1922-23 ..	0·06	0·60	..	0·20	0·49	..	..	0·01	..	..	..	0·08	1·44
3	Mehar ..	Maximum 1878	..	1·16	..	..	0·59	0·12	3·34	10·22	..	0·02	..	..	15·46
		Minimum 1918	..	..	0·19	..	..	..	..	..	..	..	..	0·15	0·34
		Average ..	0·27	0·28	0·29	0·19	0·09	0·35	0·69	0·93	0·33	0·03	0·02	0·12	3·56
		Rainfall for 1922-23 ..	0·24	0·04	..	0·24	..	..	..	0·05	0·68	..	..	0·05	1·30
4	Dadu ..	Maximum 1917	..	..	8·34	0·23	0·05	..	..	5·27	14·82	..	..	..	20·71
		Minimum 1918	..	..	0·20	..	..	..	..	..	..	..	..	..	0·20
		Average ..	0·07	0·20	0·11	0·11	0·27	0·07	1·12	2·09	2·13	0·01	..	0·04	6·22
		Rainfall for 1922-23 ..	0·60	0·10	..	0·12	0·03	..	..	0·21	..	..	..	..	1·06
5	Sehwan ..	Maximum 1917	0·07	..	0·13	0·26	0·37	..	..	9·51	8·09	..	..	..	18·43
		Minimum 1918	..	..	0·18	0·08	..	..	..	..	..	..	..	..	0·26
		Average ..	0·30	0·31	0·15	0·17	0·14	0·42	1·69	1·49	0·46	0·03	0·06	0·11	5·33
		Rainfall for 1922-23 ..	0·36	0·17	..	..	0·15	..	0·32	0·16	0·01	..	..	..	1·17
6	Johi ..	Maximum 1878	..	1·51	..	..	0·13	..	2·20	19·91	..	..	..	..	23·75
		Minimum 1918	..	..	0·16	..	..	..	..	..	..	..	..	..	0·16
		Average ..	0·10	0·19	0·13	0·25	0·21	0·23	2·05	2·40	1·53	0·02	0·01	0·03	7·19
		Rainfall for 1922-23 ..	0·48	0·11	..	..	0·03	..	..	0·02	0·47	..	..	..	1·11
7	Kakar (Khairpur Nateshah).	Maximum 1917	0·06	..	0·22	..	0·02	..	..	5·48	10·74	..	..	..	16·52
		Minimum 1922	..	0·22	..	..	..	..	..	..	..	..	..	..	0·22
		Average ..	0·08	0·16	0·16	0·14	0·12	0·26	0·63	1·61	1·53	0·08	..	0·08	4·85
		Rainfall for 1922-23 ..	0·18	0·17	..	0·16	0·13	..	..	..	..	..	..	..	0·62
8	Nasirabad ..	Maximum 1878	..	1·03	..	..	0·86	..	1·20	10·23	..	..	..	0·09	13·32
		Minimum 1918	..	..	0·18	..	..	..	..	..	..	..	..	0·27	0·27
		Average ..	0·09	0·13	0·14	0·15	0·19	0·08	0·66	1·24	1·09	0·39	0·03	0·23	4·23
		Rainfall for 1922-23 ..	0·03	0·56	..	..	0·19	..	..	..	..	..	..	0·20	1·00
9	Kambar ..	Maximum 1917	0·11	..	0·56	..	0·64	..	..	6·29	7·23	..	..	..	14·83
		Minimum 1922	0·04	0·13	..	0·02	..	..	..	..	..	..	..	0·10	0·29
		Average ..	0·05	0·16	0·35	0·22	0·13	0·14	0·51	1·00	1·06	0·20	0·03	0·01	3·86
		Rainfall for 1922-23 ..	..	0·68	..	..	0·15	..	..	..	..	..	..	0·10	0·93
10	Rato-dero ..	Maximum 1917	0·03	..	0·35	..	0·93	..	..	9·89	6·73	..	..	..	17·93
		Minimum 1918	..	..	0·22	..	..	..	..	..	..	..	..	0·10	0·32
		Average ..	0·02	0·23	0·30	0·11	0·14	0·30	0·37	1·63	0·99	0·11	0·03	0·17	3·40
		Rainfall for 1922-23 ..	0·06	0·69	..	..	0·07	..	..	..	..	..	..	0·10	0·92

Temperature Details (Larkana).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	71	71	84	99	107	107	102	101	93	95	81	70
	,, minimum ..	50	51	56	73	85	88	86	82	80	72	57	47
	Absolute maximum ..	76	76	94	103	114	114	107	103	96	97	85	72
	,, minimum ..	50	51	56	76	85	88	86	82	80	72	57	47
1914	Mean maximum ..	70	72	91	102	110	107	111	103	99	94	82	70
	,, minimum ..	56	50	59	73	85	90	85	85	83	70	60	50
	Absolute maximum ..	74	75	94	106	115	112	118	109	102	95	86	72
	,, minimum ..	52	48	56	66	81	86	80	82	79	68	59	50
1915	Mean maximum ..	70	75	95	103	105	110	109	100	98	95	85	70
	,, minimum ..	53	50	63	70	80	90	90	85	82	75	60	51
	Absolute maximum ..	74	80	98	108	112	115	112	104	100	97	90	74
	,, minimum ..	51	46	56	66	86	86	87	81	78	70	56	48
1916	Mean maximum ..	72	77	94	98	104	109	104	101	97	92	82	71
	,, minimum ..	54	48	66	76	90	92	90	86	82	72	55	53
	Absolute maximum ..	75	82	96	101	108	112	108	104	100	96	84	76
	,, minimum ..	50	43	64	72	90	90	86	82	79	64	49	48
1917	Mean maximum ..	71	76	84	100	100	110	108	100	92	96	82	69
	,, minimum ..	53	50	61	67	83	91	86	82	72	75	65	49
	Absolute maximum ..	78	86	86	104	104	115	115	109	99	99	91	83
	,, minimum ..	48	54	57	60	79	86	80	76	75	72	60	44
1918	Mean maximum ..	65	64	75	87	102	109	107	98	93	80	85	67
	,, minimum ..	54	52	62	83	85	75	67	82	83	67	53	46
	Absolute maximum ..	67	69	79	92	111	112	111	102	96	82	88	70
	,, minimum ..	43	45	45	57	78	81	70	69	64	60	58	44
1919	Mean maximum ..	67	75	85	95	99	106	106	95	92	81	73	67
	,, minimum ..	44	46	63	73	86	93	94	90	83	73	58	52
	Absolute maximum ..	70	78	88	98	103	110	110	100	96	87	78	72
	,, minimum ..	40	43	59	70	80	90	90	86	80	68	56	50
1920	Mean maximum ..	67	67	75	87	97	107	107	98	95	88	87	69
	,, minimum ..	51	45	56	70	77	80	89	80	83	83	56	48
	Absolute maximum ..	68	69	78	90	100	111	111	100	99	92	91	72
	,, minimum ..	49	40	64	68	75	76	87	77	79	79	52	44
1921	Mean maximum ..	65	70	82	95	105	106	100	90	94	89	84	69
	,, minimum ..	50	47	65	75	90	86	82	83	81	78	63	54
	Absolute maximum ..	68	74	86	100	112	110	106	94	98	93	88	70
	,, minimum ..	40	43	62	73	86	82	80	79	77	75	60	50
1922	Mean maximum ..	65	73	90	99	109	110	100	99	100	90	83	70
	,, minimum ..	49	55	60	76	84	90	86	80	81	73	65	50
	Absolute maximum ..	68	73	94	102	112	112	104	103	102	94	85	72
	,, minimum ..	46	52	57	72	81	86	85	78	78	69	60	48

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Gram.	Jowari Kadbi.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Larkana ..	23	26	17	19	124	171	1 5 2	9 10 0	0 7 5
	Non-headquarter towns.									
2	Labdarya ..	24	25	19	22	288	96	1 0 0	0 4 10	0 4 0
3	Mehar ..	24	23	13	25	118		1 6 10	0 7 8	0 7 10
4	Dadu ..	31	33	13	23	220		1 0 2	0 6 0	0 4 0
5	Sehwan ..	24	24	13	26	78		1 4 0	0 7 0	0 6 3
6	Johi ..	29	24	19	23	..	152	1 1 7	0 6 5	0 6 3
7	Kakar ..	26	25	12	23	290	170	1 5 5	0 6 2	0 5 7
8	Warah ..	29	26	22	21	179	139	1 0 0	0 8 0	0 8 0
9	Kambar ..	25	27	14	24	..	100	1 3 10	0 7 10	0 6 3
10	Ratodero ..	25	26	11	..	258	..	1 2 10	0 7 10	0 7 5
11	Mirokhan ..	25	25	16	23	145	180	1 1 0	0 5 6	0 5 4
	Average of the non-headquarter towns.	26	26	15	23	192	140	1 2 10	0 6 9	0 6 4

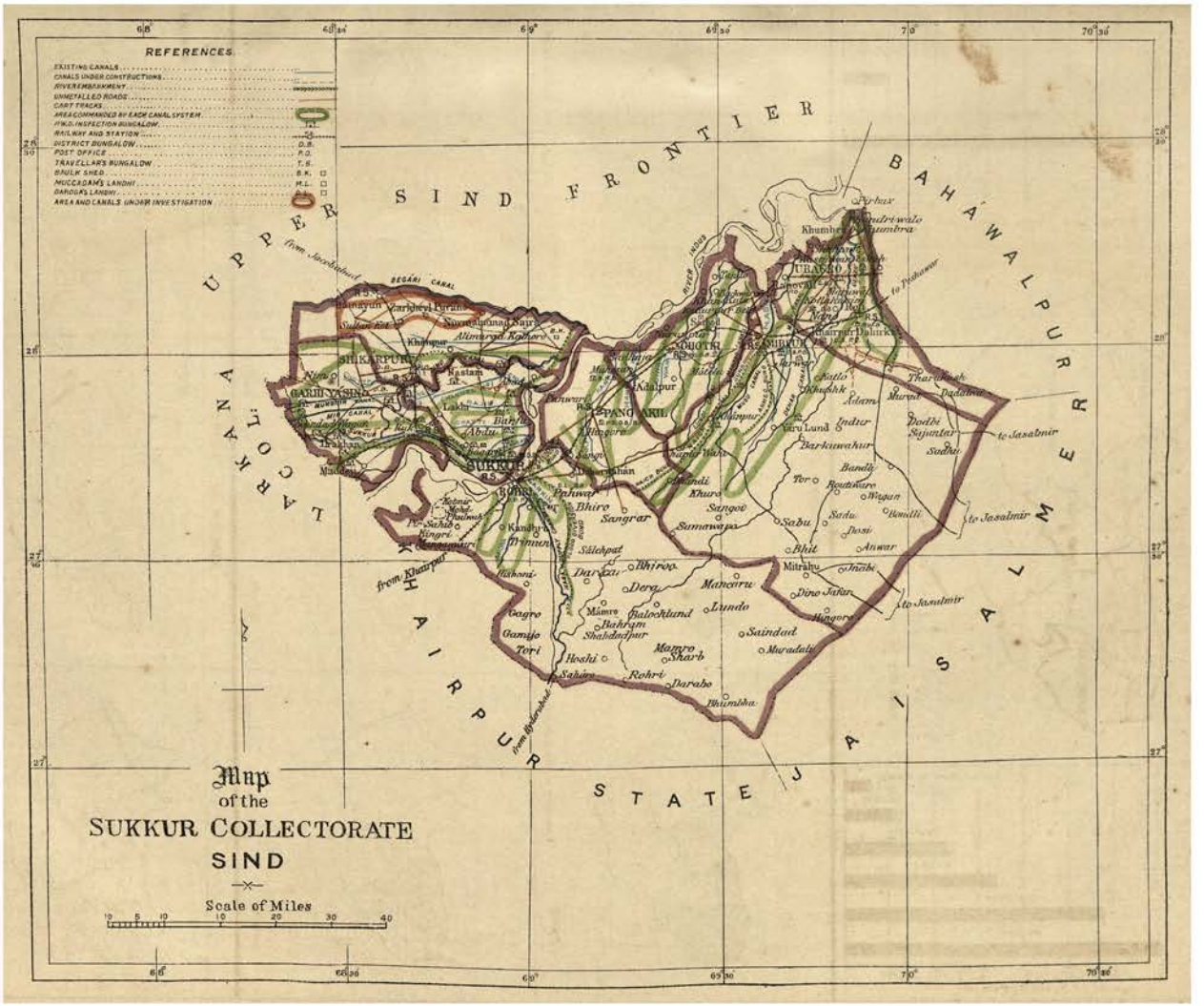
Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Gram.	Jowari Kadbi.	Dry grass.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
	Headquarter towns.							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Larkana ..	22	18	11	8	50	..	2 3 0	0 12 0	0 12 0
	Non-headquarter towns.									
2	Labdarya ..	18	24	12	25	64	90	2 4 0	0 12 0	0 12 0
3	Mehar ..	16	20	8	19	115		2 5 0	0 9 0	0 11 0
4	Dadu ..	28	26	10	..	..		2 0 0	0 8 0	0 8 0
5	Sehwan ..	20	17	18	14	206		2 5 0	0 10 0	0 6 6
6	Johi ..	20	..	8	15	..	160	2 0 0	0 8 6	0 9 6
7	Kakar ..	20	11	10	7	91	302	1 14 0	0 12 0	0 11 0
8	Warah ..	22	12	9	15	164	164	2 0 0	0 12 0	0 10 0
9	Kambar ..	20	19	9	15	..	100	2 8 0	0 12 0	0 12 0
10	Ratodero ..	22	..	8	12	..	..	2 6 0	0 12 0	0 12 0
11	Mirokhan ..	24	22	9	22	300	300	2 6 0	0 12 0	0 12 0
	Average for the period.	22	20	10	17	172	187	2 2 7	0 11 6	0 10 6

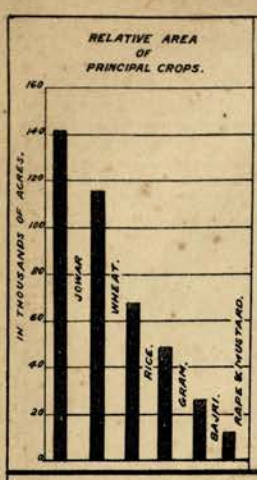
Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

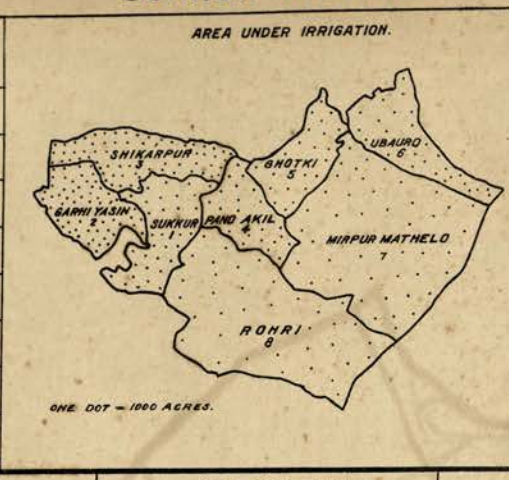
Months.	1911-12. Relief Workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief workers.	Dependants.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.
	No Relief Works were opened.						No Relief Works were opened.						No Relief Works were opened.					

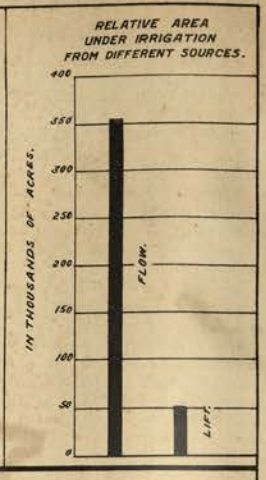
Average for the period.

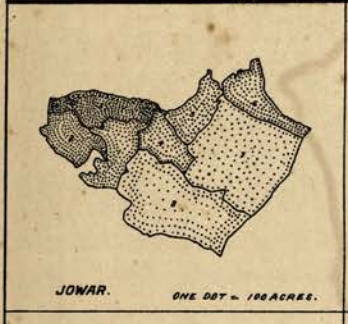

REFERENCES
EXISTING CANALS
CANALS UNDER CONSTRUCTIONS
RIVER EMBANKMENT
UNMETALLED ROADS
CART TRACKS
AREA COMMANDED BY EACH CANAL SYSTEM
P.W.D. INSPECTION BUNGALOW
RAILWAY AND STATION
DISTRICT BUNGALOW
POST OFFICE
TRAVELLAR'S BUNGALOW
BAULK SHED
MUCCADAM'S LANDHI
DAROGA'S LANDHI
AREA AND CANALS UNDER INVESTIGATION
UPPER SIND FRONTIER
BAHÁWALPUR
LARKANA COL.
KHAIRPUR STATE
JAISALMER
SUKKUR
SHIKARPUR
GARHI YASIN
PANO AKIL
URAGRO
Mup
of the
SUKKUR COLLECTORATE
SIND
Scale of Miles
10 5 10 10 20 30 40

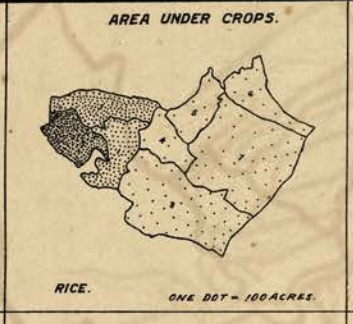
SUKKUR DISTRICT.

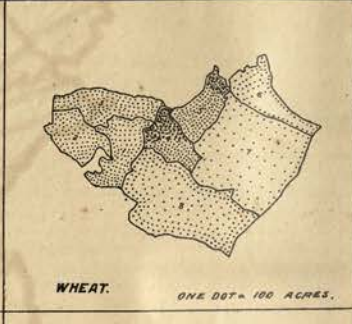


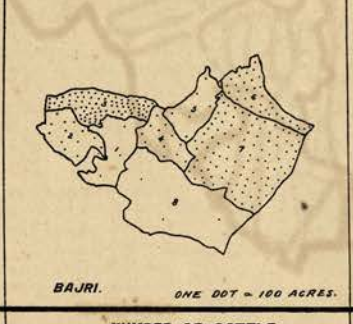


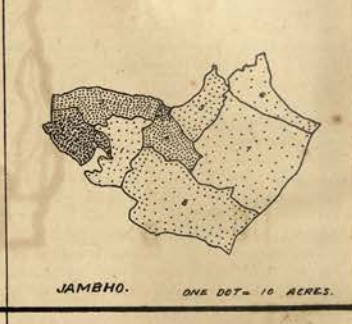


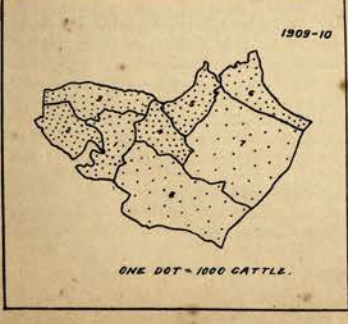


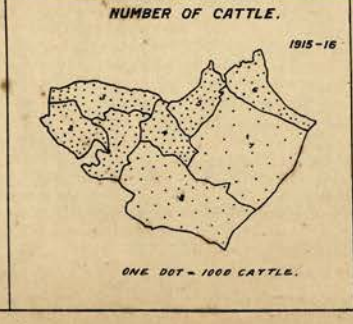


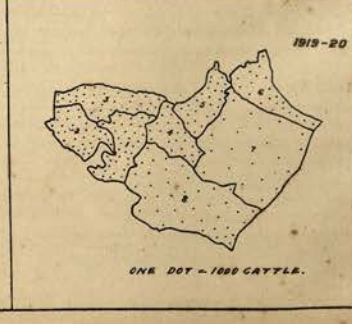












SUKKUR

POSITION AND AREA

The district of Sukkur lies between 27° 5′ and 28° 26′ north latitude and 68° 15′ and 70° 40′ east longitude and covers an area of 5,606 square miles. It is bounded on the north by the Upper Sind Frontier district and the Bhawalpur State of the Punjab ; on the east by the States of Bhawalpur and Jaisalmer ; on the south by Khairpur State and Larkana district ; and on the west by the Larkana and Upper Sind Frontier districts.

PHYSICAL FEATURES

A large portion of the district including all the Rohri taluka east of the Nara and a part of the Mirpur Mathelo and Ubauro talukas consists of hills of wind-blown sand, running in parallel rows from north-east to south-west. This is known as the Registan and is part of the Great Desert which continues into the Thar and Parkar district. A very little rain suffices to sustain a surprising amount of vegetation on the hills, consisting chiefly of shrubs on which camels feed, while the valleys are often moist enough to admit of cultivation and when uncultivated, to yield luxuriant crops of rank grass. The sub-soil in Registan is everywhere extraordinarily salt and there is consequently difficulty in obtaining water fit to drink. Some tracts are quite uninhabitable from this cause. The remainder of the district with the exception of the hills south of Rohri and the strip of barren *"pat"* that flanks them, is a level plain covered with alluvial loam. The irrigated land is very fertile. Where the land is not irrigated as in much of the Shikarpur taluka north of Shikarpur it soon becomes overgrown with tamarisk and other characteristic vegetation.

Hills.—There are no hills in the district except the low range on the northern extremity of which Sukkur and Rohri are built and which run southward from that point to the Khairpur boundary. Their greatest elevation is about 480 feet above sea-level. They belong to the same group as the Khirthar range which they resemble in their rugged and barren aspect.

Rivers.—The Indus traverses the whole length of the district. Above Sukkur its course changes from year to year. At Sukkur it passes through the gorge between that town and Rohri, the island of Bukkar bisecting the channel. The only other river of the district is the Eastern Nara.

CLIMATE AND RAINFALL

The climate of Sukkur is that which prevails throughout Upper Sind. There are two well-defined seasons, the hot and the cold. The former may be said to begin at any time after the middle of March, the latter after the middle of October. The weather in December, January and February is ordinarily cold and bracing. July and August are the months in which most rain falls but it may be expected with more certainty in January, February and March. September, October and November are the most rainless months. The average rainfall for the district is a little above three inches and a half.

CULTIVATION

The cultivation as prevailing in the different talukas is noted below :—

Sukkur.—The eastern boundary of this taluka is formed by the river and is covered with forests. Irrigation is carried on both from the river Indus and Government canals. About ninety-five per cent. of the cultivation is by flow and the rest by lift.

Shikarpur.—In this taluka about ninety per cent. of the cultivation is under flow. Large tracts to the west and north-west are very imperfectly irrigated.

Garhi Yasin.—The northern portion is comparatively high and dry but the central and southern parts are fertile. About eighty-six per cent. of the cultivation is under flow.

Rohri.—The Nara divides this taluka into Sind and the Registan. The Sind portion is irrigated but the Registan entirely depends for its cultivation on rain. About seventy-four per cent. of the irrigated area is under flow.

Ghotki.—The taluka consists of a narrow tract of country situated along the course of the Indus. The general level of the ground is low and the whole taluka is traversed by depressions caused by the vagaries of the river. It is partly watered by Government canals. The " *Kachas* " are irrigated direct by the river and produce luxuriant wheat crops. Eighty-three per cent. of the cultivation is under flow.

Pano Akil.—Part of this taluka is a waste. The remainder is akin to Ghotki taluka. About eighty per cent. of the cultivation is under lift.

Mirpur Mathelo.—Much of the land is composed of sand hills and desert. Sixty-one per cent. of the cultivation is under flow.

Ubauro.—This was formerly fertilised by the floods but is now under canal irrigation. Only thirty-five per cent. of the cultivation is under flow.

SOIL

The soils of the talukas do not materially differ from one another since geologically the district is uniform. The main soils are (*a*) *Kalrathi* suitable for rice crops, (*b*) *Dasar* and (*c*) *Wariasi* suitable for *jowar*, *bajri* and sesame, (*d*) *Latiari* suitable for wheat, chickling vetch and *jambho* and (*e*) *Paki* suitable for all crops.

CROPS

The principal *kharif* crops are *jowar*, rice, *bajri*, sesame and the principal *rabi* crops wheat, chickling vetch, gram, rape and *jambho* and tobacco.

Jowar.—This is the staple food crop of the district and is grown in every taluka. Two varieties white and red are cultivated.

Rice.—This is chiefly grown in the Garhi Yasin, Shikarpur and Sukkur talukas. White varieties only are grown in the district, the most common sorts being Sugdasi, Sathria and Kangni.

Bajri.—The area under *bajri* is very much less than *jowar*. It is mostly cultivated in the Mirpur Mathelo and Shikarpur talukas.

Sesame.—This is grown in every taluka but the area is inconsiderable. Shikarpur and Garhi Yasin alone account for over sixty per cent. of the total area.

Wheat.—This is grown in every taluka. Only the white varieties known as Thori, Gaj and Kahni are cultivated.

Chickling Vetch is largely grown in Garhi Yasin, Shikarpur, Rohri and Ghotki talukas. Elsewhere the area cultivated is small.

Gram is chiefly grown in Shikarpur, Sukkur, Garhi Yasin and Rohri talukas.

Rape and Jambho.—The area cultivated with rape is not large in any taluka but *jambho* is grown to a considerable extent in Shikarpur, Garhi Yasin, Rohri and Mirpur.

Tobacco.—The cultivation of tobacco is small and is distributed in every taluka of the district.

Normally, *jowar* occupies from one and a quarter to one and a half lakhs of acres ; *bajri* twenty-five thousand acres, rice, seventy thousand acres and wheat, slightly over one lakh of acres. Under pulses, the most important are gram and *lang*, the former covering roughly fifty thousand and the latter thirty thousand acres. The cultivation of tobacco which occupies about two thousand acres is confined chiefly to the Shikarpur and Garhi Yasin talukas. Among oilseeds, *jambho* with nearly ten thousand acres under it stands first, followed by sesame, with five thousand acres, and rape and mustard with two thousand and a half. Cotton with one thousand acres and sugarcane with a few hundred acres under it, are comparatively insignificant in the district.

CATTLE

The domestic animals comprise camels, horses, buffaloes, bullocks, sheep, goats, mules and donkeys. The total number of cattle is about two lakhs and a half. Of this nearly one-third are plough cattle, two-fifths milch cattle and one-fifth are young stock. Among milch cattle, cows are nearly three times the buffaloes.

FORESTS

There are about 426 square miles of forest of which five square miles are Protected Forest. The reserves form small detached forests in flat and almost rainless country and the tree growth depends almost entirely on the yearly inundation of the river Indus. The areas reached by the floods are well wooded but where flood water is absent or defective the growth consists merely of shrub and bushes. The principal species are *Babul* (Acacia arabica), *Kandi* (Prosopis spicigera), *Bahan* (Populus euphratica) and *Lai* (Tamarix gallica and Tamarix dioica). The *Bahan* and *Lai* are principally riverain species, while the *Kandi* is able to thrive on dry and arid soils. *Babul* timber is used in the construction of ploughs, carts, Persian wheels, etc., while the excellent quality of the fuel and charcoal which the tree produces is well known. The bark is used for tanning and the pods as fodder for cattle, camels and goats. *Kandi* likewise gives an excellent fuel and the pods are also in demand as fodder. *Bahan* wood is employed for roofing material and in turnery and lacquer work. *Lai* is a fuel in common use and used by the poorer classes as hutting material.

The forests are worked on a rotation of thirty years and the produce is conveyed to the large local centres such as Sukkur and Rohri and also exported to Quetta and other outside towns.

The riverain forests afford valuable pasturage for cattle in years of scarcity when they are much frequented by the nomadic tribes of the desert tracts, who bring their herds of cattle, camels and goats to feed on the leaves and pods.

IRRIGATION

The main canals in the district are (1) Seharwah, (2) Mahiwah system, (3) canals in Rohri division, (4) Sind canal and (5) Sukkur canal, besides some minor canals like Rajib, Chiti, Garang, Garkino, etc.

(1) *Seharwah.*—This is an old canal. It takes off from the Gudu Dhand near Khambra village and runs through Ubauro taluka. It is twenty-eight miles long with a bed width of fifteen feet, a full supply depth of five feet and a half and discharging two hundred cubic feet per second.

(2) *Mahiwah system* comprises the Mahiwah and its important branch the Dehar and two other independent canals the Masuwah and the Mahrowah.

Mahiwah takes off from the Gudu Dhand and runs through Ubauro and Mirpur talukas. It was constructed in 1901. The bed width at the mouth is fifty feet and the full supply depth eight and a half feet, and the average discharge passing down it nine hundred and fifty cubic feet per second.

(3) *Canals in Rohri Division.*—These comprise the Lundiwah, Dengrowah, Mahesrowah, Koraiwah and Janibwah, the first of which takes off from the river about two miles north of Sarhad station, the second from the Kadirpur Dhand tail and the last three from the San Dhand, all the five running through Ghotki and Pano Akil talukas.

(4) *Sind Canal* is an old inundation canal and takes off direct from the River near Loi village in the Shikarpur taluka, being forty-one miles long and fifty feet wide. There is another feeder to this canal called the Colonel Fife's channel about three miles in length taking off from a *dhoro* of the river and meeting the Sind canal at the tenth mile. The bed width of this channel is fifty feet.

The Sind canal system was widened and extended in the year 1896-97. The full supply depth of the canal at head is eleven feet and the average discharge passing down it through Colonel Fife's channel is 2,100 cubic feet per second.

Rajib, Chiti and Garang are minor independent canals passing through the Sukkur Begari Bund.

(5) *Sukkur Canal.*—This is a semi-perennial canal of old standing. Its original head is from the river at Sukkur which is opened for *rabi* irrigation. The length of the canal is 63 miles of which the last portion lies in the Larkana District. The bed width at the head of this channel is 30 feet. Another head of the canal, which is the inundation head, takes from a *dhandh* near Rahuja. This is 11½ miles in length. The bed width of this channel is 60 feet.

Besides these irrigation systems a new project costing a lakh of rupees called the Garkino canal was taken in hand in 1923-24. This canal takes off from a *dhand* of the river about two miles east of Rohri.

PROTECTIVE BUNDS

Sukkur Begari Bund.—It is situated on the right bank of the river in Sukkur and Shikarpur talukas. It commences from the Head Regulator of the Sukkur Canal at Sukkur and ends at the new Begari Head Regulator at Choi where it joins the Kashmor Bund. Length of the main bund is thirty-five miles and its loops measure thirty-eight miles. On the left bank there are also some bunds the most important of which is the Flood Diversion Bund.

TRADE AND INDUSTRIES

The manufactures include earthenware, metal vessels, coarse cotton cloth and leather articles. The towns of Ghotki and Khairpur Daharki are noted for their manufactures of pipe-bowls, snuff-boxes, scissors, and cooking pots. *Tasar* silk is manufactured at Rohri. The former trade through the Bolan Pass has almost entirely ceased, goods from Afghanistan and Central Asia taking the railway route. Sukkur and Shikarpur are the only two important trade centres. The former has a large trade with the Punjab in wheat, timber, iron and piece-goods. The traders of Shikarpur have direct dealings with Afghanistan, Bahrein, Cutch, Constantinople, China and Japan in carpets, pearls, silks, silver-work and fancy work. The people of Shikarpur are very enterprising and are to be found in many parts of the world. Both the towns of Sukkur and Shikarpur carry on a large import trade in wool from Afghanistan.

COMMUNICATIONS

The district is favourably situated as regards communications. The Lahore-Karachi and Sukkur-Quetta lines of the North-Western Railway pass through the centre of the district affording easy means of access to the major portion of the district except the desert tract in the east. There is a net work of unmetalled roads in the district. The river Indus passing through the midst or along the boundary of the district is a further means of communication by boats. The Eastern Nara Channel of the river traversing the Rohri taluka also permits boat traffic during the greater part of the year.

RELIGION

The total population of the district 510,292, is composed of 151,292 Hindus, 358,396 Musalmans, 481 Christians and 123 Parsis.

LANGUAGES

The vernacular is Sindhi, spoken by about 89 per cent. of the population. The other languages prevalent are, Baluchi spoken by 3·6 per cent., Siraiki or Jatli spoken by 3·3 per cent. and Rajasthani spoken by 1·2 per cent. of the population.

OCCUPATIONS

Broadly speaking, 261,241 persons or 57·2 per cent. are supported by Agriculture. Industry (including mines) supports, 64,933 persons or 12·7 per cent., Commerce 73,669 persons or 14·4 per cent., Professions and the Liberal Arts 13,916 persons or 2·7 per cent. while the remainder of the population of 96,533 persons or 18·9 per cent. have to follow various other occupations for maintaining themselves.

In the towns of Sukkur, Shikarpur and Rohri people live mostly by trade and banking and are well off. Outside these towns the main source of living is pasture and agriculture which supports about seventy per cent. of the population.

ECONOMIC CONDITION

The land tenure in the district is *rayatwari*. An area of roughly three lakhs of acres is held as political, charitable and miscellaneous *inams* and rent-free garden grants. The *Patadari* system under which a fixed proportion of revenue on certain lands is assigned to the grantees is also in vogue. In the *Rayati* lands the relations between *zamindars* and *haris* are good and friendly on the whole. Owing to the prevalence of big properties together with a comparatively numerous population of *haris* firmly settled in and greatly attached to their villages, the *zamindars* are able to exert a semi-patriarchal and semi-feudal authority over the *haris* and the people of their *raj*. The bulk of the land is let out to the *haris* on the *batai* system, the contract being oral and for one crop or season only, though the same *hari* will often cultivate for the same *zamindar* year after year. Besides the ordinary system of '*batai*' a lot of land is given out on what is called '*Danai*' (otherwise known as *Dan* or *Lungi*). This is a cash tenancy, generally oral, whereby the *hari* takes up the land for one season or crop only, engaging to pay so much per acre or *jireb* and takes the whole crop making what he can out of it. The cultivators are not badly off; they can easily make a living in a normal year, while the *zamindar* will commonly tide them over a bad one to make sure of keeping their services. Sukkur and Shikarpur towns provide them with ample labour in the slack season and they can also earn money by carting in the off season. They have not much credit though they can borrow on the security of their cattle and can usually get their *zamindar* to lend them his credit with the *bania* up to a certain amount.

The occurrence of famine is unknown in this district on account of facilities of irrigation for cultivation and easy communications of transport of agricultural produce. Good **Drinking Water** is available in abundance everywhere except in parts of the Desert portion.

LIABILITY TO FAMINE

The only tract to be considered in respect of famine is the Desert or 'Registan' portion of the Rohri, Mirpur Mathelo and Ubauro talukas, which is away from irrigational works and railway communication.

The conditions prevailing in this tract are as following: —

There is hardly any cultivation in the Registan and the small population living there depends mostly on cattle. The peculiar feature of this tract, as already noted elsewhere, is that a very little rain suffices to sustain a surprising amount of vegetation on the sand hills which provides abundant and rich pasture for the cattle. 'Salwadora' (*khabar*) also grows here and gives food for camels. The valleys admit of cultivation on *rain and if not* cultivated yield luxuriant crops of hay. In prosperous seasons the '*maldars*' do a fairly large trade in the sale of their cattle and camels in Sind, Gujarat and other parts. The subsoil is mostly saltish and there is consequently a difficulty in obtaining water fit to drink. Some tracts are quite uninhabitable from this cause. The only means of travelling and transport in the Desert is camels.

MIGRATION

On the occurrence of scarcity due to the absence of rain people migrate to the adjoining State of Bahawalpur or come down to the district or taluka

headquarter towns where they have no difficulty in finding labour for their maintenance. No special measures are required in the desert tract of this district to provide against bad seasons due to scarcity of rains.

FORECAST OF RELIEF WORKERS

There is nothing on which to base a forecast of the number of persons likely to require employment on relief works in a year of distress nor there is any necessity of framing such an estimate in the unlikely event of famine.

SUKKUR STATISTICAL TABLES.

Cultivated and Uncultivated Area, 1922-23.

Irrigation Abstract, 1922-23.

No.	Taluka.	Number and area of villages: Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on total area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallow.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Others.	Total.	Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		No.	Area in square miles.	No.	Area in square miles.	No.	Area in square miles.	No.	No.	Rs.	No.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Sukkur	61	267	2	6	63	273	98,958	362	2,37,873	63	175,025	100	33,644	21,963	34,812	90,419	10,360	33,533	40,713	84,606	27,179	..	..	..	6,465	33,644	10,809	1,751	20	15,929	340	..	192	330	2,316	65	373	42,098	8,434	33,664
2	Garhi Yasin	93	392	7	10	100	402	62,534	156	2,96,458	100	257,547	100	57,626	15,749	47,626	119,063	46,035	44,739	47,830	138,604	56,389	..	..	..	1,237	57,626	28,878	3,993	6	19,815	1,299	..	2,559	23	2,742	..	4	1,189	60,436	2,810	57,626
3	Shikarpur	88	484	5	20	93	504	113,070	234	3,39,149	93	311,499	100	65,519	29,005	82,591	177,103	62,155	30,929	41,310	134,394	64,787	..	..	..	..	65,516	16,497	1,938	..	30,816	8,031	..	942	28	5,104	15	2,313	65,734	238	65,496
4	Pano Akil	90	391	1	2	96	393	41,380	106	1,29,391	96	252,732	100	22,231	19,952	44,105	86,318	60,026	64,862	41,531	166,419	18,009	135	..	3,658	429	22,231	595	8,252	60	11,910	1,256	..	481	..	364	886	711	23,380	1,149	22,231
5	Ghotki	90	341	1	4	91	345	41,684	122	1,12,396	91	220,197	100	22,344	10,985	52,573	85,902	53,222	35,395	45,676	134,293	19,107	..	..	3,237	..	22,344	581	9,634	54	11,060	965	..	278	9	678	45	580	23,596	1,250	22,344
6	Ubauro	93	462	..	..	93	462	30,631	80	1,04,656	93	306,097	100	27,974	4,234	61,356	93,449	113,811	21,611	67,228	202,648	19,104	2,375	..	6,491	..	27,974	988	2,899	78	14,538	3,233	1	610	1	137	29	366	28,217	1,557	27,974
7	Mirpur Mathelo.	90	1,604	..	..	90	1,604	34,562	24	1,32,925	90	1,026,394	100	44,993	529	62,838	108,410	840,626	917,594	840,626	2,598,846	44,088	..	..	..	..	44,997	4,149	9,773	16	18,268	10,439	..	3,987	..	217	88	1,908	48,862	3,865	44,997
8	Rohri	74	1,224	13	405	87	1,629	77,310	47	1,23,270	87	1,048,491	100	36,939	19,200	271,095	327,224	51,438	12,720	657,109	721,267	22,360	7,865	..	2,143	4,571	36,939	5,023	8,865	84	19,357	318	..	986	..	2,594	34	1,022	38,283	1,344	36,939
	Total	686	5,165	29	447	715	5,612	510,292	91	14,68,514	715	3,588,072	100	311,174	119,690	657,007	1,087,871	461,183	256,993	1,782,025	2,500,201	271,023	10,375	..	17,171	12,702	311,271	67,506	62,045	318	142,062	25,570	1	9,583	392	14,152	467	8,322	330,618	19,347	311,271

Cultivated and Uncultivated Area, 1918-19.

Irrigation Abstract, 1918-19.

No.	Taluka.	Number and area of villages: Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population. Total.	Density per square mile.	Land Revenue	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column on total area.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallow.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Others.	Total.	Area irrigated from: Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated: Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		No.	Area in square miles.	No.	Area in square miles.	No.	Area in square miles.	No.	Density per square mile.	Rs.	No.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Sukkur	61	265	2	6	63	271	103,109	340	1,47,615	63	173,891	100	31,816	1,213	55,167	88,196	12,117	32,957	40,621	85,695	28,988	..	..	..	..	31,816	7,139	9,192	..	..	..	..	15,833	277	1,844	..	675	34,958	3,142	31,816
2	Garhi Yasin	93	392	7	10	100	402	75,983	189	1,90,141	100	257,621	100	44,042	765	71,044	115,851	48,860	44,253	48,657	141,770	40,821	..	..	3,020	201	44,042	21,721	6,516	..	..	..	..	20,212	24	1,192	..	1,159	50,644	6,902	44,042
3	Shikarpur	88	466	5	20	93	486	119,614	257	1,96,418	93	311,284	100	55,166	1,953	113,438	171,919	69,281	29,910	40,084	139,275	53,154	..	..	1,953	..	55,107	15,116	6,942	..	..	..	..	33,340	28	2,491	..	1,650	59,269	4,162	55,106
4	Pano Akil	90	389	1	2	94	391	45,260	139	24,672	94	250,322	100	19,210	4,252	60,773	80,845	64,430	64,860	40,195	169,485	16,218	..	..	5,196	1,125	22,539	872	7,314	..	..	..	..	2,824	..	507	..	507	11,403	1,193	10,210
5	Ghotki	89	356	1	4	90	360	46,082	136	80,615	90	236,921	100	11,912	10,622	61,100	83,634	85,016	42,717	55,554	183,287	5,730	..	..	6,182	..	11,912	1,832	4,646	..	Separate figures not available.			5,141	15	459	..	633	12,726	814	11,912
6	Ubauro	93	468	..	..	93	468	44,564	95	62,213	93	289,457	100	17,361	1,927	64,342	83,630	122,667	19,356	71,999	214,022	10,703	..	..	6,658	..	17,361	689	6,902	..				9,179	..	197	..	553	17,322	161	17,361
7	Mirpur Mathelo.	90	1,603	..	..	90	1,603	51,353	32	77,040	90	1,026,376	100	23,637	2,557	74,682	100,876	68,930	13,204	843,366	925,500	18,646	..	..	4,991	..	23,637	1,492	4,553	..				16,688	..	271	..	1,056	24,063	426	23,637
8	Rohri	74	1,233	13	405	87	1,638	87,942	54	84,907	87	1,048,613	100	31,203	7,481	286,146	324,830	430,701	12,809	280,273	723,783	18,603	6,460	..	4,677	1,463	31,203	2,947	10,048	..				15,668	1	2,454	..	993	32,111	908	31,203
	Total	683	5,182	29	447	712	5,629	573,913	103	9,13,621	712	3,604,905	100	231,287	32,082	786,317	1,049,686	873,002	260,078	1,420,139	2,555,219	188,573	6,460	..	33,465	2,789	231,287	51,809	55,831					123,887	348	9,795		7,228	248,896	17,609	231,287

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse-grains.	Maize.	Kodra.	Others.	Total.	Pulses. Tur.	Gram.	Mugand (Udid.	Math. and Kulth.	Lang (Moth.)	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Starches.	Sugarcane.	Oil Seeds. Sesame.	Linseed.	Rape and Mustard.	Niger-seed.	Jambho.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct: areas cropped twice	Remainder cropped.	Remainder not cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Sukkur	15,908	340	10,809	13,727	24	..	..	37	40,845	..	15,647	113	..	2,588	18,346	1,802	517	663	2,982	772	5	777	142	19	353	92	1,036	..	404	..	1,532	2	68	2	68	632	64,006	8,495	55,507
2	Garhi Yasin	19,815	1,299	28,878	10,394	42	..	..	8	60,436	..	5,494	1,200	..	12,244	18,938	2,408	223	176	2,807	602	18	820	291	3	23	1,062	..	377	..	3,154	..	4,613	..	4	..	41	87,280	16,413	71,867
3	Shikarpur	30,886	6,031	16,497	13,523	355	..	..	120	67,408	..	18,520	940	..	4,509	23,969	3,023	761	1,309	5,093	740	23	763	279	..	28	1,964	..	416	..	2,128	14	4,522	193	14	..	207	103,215	9,710	93,524
4	Pano Akil	11,910	1,256	593	18,832	9	..	..	178	32,778	..	1,521	38	..	5,766	7,325	359	15	147	521	44	..	44	13	..	..	643	..	132	..	1,643	..	2,470	2	296	..	296	28	49,483	1,268	42,213
5	Ghotki	11,060	665	581	17,040	560	..	..	..	29,906	..	1,940	20	..	1,340	3,300	373	1	191	565	85	..	85	195	..	..	898	..	307	..	1,030	..	2,430	..	454	..	454	4	35,060	1,437	33,629
6	Ubauro	14,858	3,252	980	11,220	..	..	..	600	30,910	..	167	73	..	573	813	112	2	9	123	7	..	7	65	..	1	253	..	23	..	244	..	552	..	29	..	29	172	32,516	805	32,213
7	Mirpur Mathelo.	18,268	10,409	4,149	10,317	228	..	..	..	43,367	..	2,565	138	..	1,097	3,800	206	11	4	221	6	..	6	9	..	..	359	..	6	..	733	..	1,338	601	88	..	689	75	49,438	3,866	43,572
8	Rohri	19,357	318	5,023	21,297	30	..	..	124	46,149	..	4,217	..	..	3,621	7,838	306	312	3,325	2,662	262	..	262	219	2	..	34	..	154	..	1,362	..	1,550	30	44	1	45	510	59,267	3,728	56,139
	Total	142,062	25,570	67,506	116,350	1,246	..	..	1,067	353,801	..	48,571	2,423	..	34,736	85,730	8,591	1,410	4,770	13,771	1,918	48	1,966	935	24	392	4,783	..	2,581	..	10,247	1	17,614	839	1,025	5	1,030	714	476,811	45,847	430,964

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse-grains.	Maize.	Kodra.	Others.	Total.	Pulses. Tur.	Gram.	Mugand (Udid.	Math. and Kulth.	Lang (Moth.)	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Starches.	Sugarcane.	Oil Seeds. Sesame.	Linseed.	Rape and Mustard.	Niger-seed.	Jambho.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct: areas twice	Remainder cropped.	Remainder not cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Sukkur	10,459	147	7,139	9,471	147	..	..	..	27,363	..	4,818	125	..	1,135	5,965	1,138	3	559	1,700	113	1	114	156	2	277	13	108	..	69	..	200	5	212	..	217	118	36,172	3,143	33,029
2	Garhi Yasin	13,621	1,394	21,721	6,837	42	..	..	..	43,615	..	627	22	..	5,588	6,237	1,018	15	94	1,127	235	..	235	81	2	24	103	..	69	..	647	..	821	5	58	..	63	..	51,609	9,643	41,807
3	Shikarpur	19,183	7,250	15,116	8,819	26	..	8	..	50,382	..	5,014	123	..	2,819	7,956	1,398	66	1,083	2,547	433	..	433	54	..	..	93	..	250	..	512	..	855	228	122	..	122	22	62,627	4,166	58,461
4	Pano Akil	7,126	452	873	10,357	80	182	..	..	19,070	..	102	15	..	1,068	1,185	418	..	42	460	21	..	21	28	..	..	406	..	191	..	598	..	1,195	..	740	..	742	12	22,144	1,674	20,472
5	Ghotki	4,771	273	1,832	11,861	197	190	19	133	19,476	..	243	14	..	1,691	1,948	436	..	135	571	48	..	48	97	..	15	74	..	52	..	623	..	749	..	1,220	..	1,220	..	23,788	1,254	22,534
6	Ubauro	6,492	2,123	698	8,258	134	98	11	11	18,091	..	254	11	..	454	719	172	18	8	198	5	..	5	12	..	..	389	..	5	..	92	..	486	..	131	..	131	..	19,418	230	19,188
7	Mirpur Mathelo.	10,990	5,961	1,992	5,927	200	..	..	..	25,071	..	364	3	..	288	655	250	5	18	273	10	..	10	21	..	..	321	..	5	..	256	..	582	283	230	..	513	..	26,194	1,153	25,041
8	Rohri	14,636	238	2,947	14,876	36	169	..	..	32,882	..	1,307	3	..	1,350	2,660	203	7	2,151	2,361	149	..	149	129	..	1	49	..	178	..	653	..	880	82	88	1	89	456	39,689	1,905	38,684
	Total	86,620	17,525	51,809	77,414	652	958	238	978	234,978	..	12,496	231	..	14,393	27,120	5,036	106	4,078	9,220	1,013	..	1,014	561	3	348	1,644	..	764	..	3,052	..	5,440	600	2,307	4	2,811	701	282,796	19,427	263,369

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For passengers.	Carts. For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Sukkur	10,691	..	79	10	225	..	11,632	3,789	8,349	34,475	776	615	1,235	1,192	304	4,937	4	99	2,778	11·1
2	Garhi Yasin	10,003	14	530	1	..	..	8,375	6,761	4,977	30,661	2,419	22,774	894	2,968	15,806	644	502	4,672	..	34	2,676	15·1
3	Shikarpur	9,102	179	282	29	2	19	11,654	2,413	3,955	31,422	1,429	24,095	1,420	4,188	22,560	806	528	5,048	6	30	2,930	18·6
4	Pano Akil	10,467	..	259	..	..	..	6,558	2,085	2,737	21,907	504	21,907	581	1,709	12,742	588	93	4,762	..	..	1,581	9·6
5	Ghotki	10,227	..	81	28	..	..	8,536	2,770	2,384	24,026	1,070	25,096	835	4,027	10,919	678	62	4,628	..	..	1,494	7·0
6	Ubauro	9,596	..	..	..	..	..	7,985	2,674	1,278	21,533	220	21,377	349	4,967	14,547	685	454	..	3,876	18	880	8·1
7	Mirpur Mathelo.	8,238	..	268	..	41	1	6,238	1,253	2,513	19,552	195	21,247	792	4,090	15,671	735	548	4,268	..	..	1,262	10·5
8	Rohri	14,044	1	155	22	36	1	14,135	4,268	3,900	36,562	3,097	29,659	1,014	5,457	16,856	1,388	1,549	9,878	1	10	2,155	9·7
	Total	82,968	195	879	91	829	22	76,934	28,436	29,593	230,945	10,998	6,634	27,961	109,829	6,778	3,840	34,148	3,887	191	15,796	11·1

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	For Ploughs. He-buffaloes.	For Breeding. Bulls.	For Breeding. Bull-buffaloes.	For other purposes. He-buffaloes.	Milch-Cattle. Cows.	Milch-Cattle. She-buffaloes.	Young Stock. Calves.	Young Stock. Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Ploughs. Large, i.e., of over 2 cattle.	Carts. For passengers.	Carts. For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Sukkur	10,691	..	79	10	275	..	11,632	3,789	8,349	37,046	776	645	12,352	1,192	304	4,937	4	99	2,778	10·3
2	Garhi Yasin	10,003	..	34	2	22	..	9,380	5,927	6,262	31,338	910	1,416	19,520	725	309	5,359	24	122	2,699	10·4
3	Shikarpur	9,102	179	282	29	2	19	8,753	3,925	3,968	30,695	890	1,703	17,791	538	542	4,783	4	4	3,180	10·8
4	Pano Akil	10,467	..	259	..	..	..	6,558	2,085	2,737	21,907	581	1,709	12,742	588	93	4,762	..	..	1,581	9·6
5	Ghotki	10,227	..	81	28	..	..	8,536	2,770	2,384	24,026	1,070	25,096	835	4,027	10,919	678	62	4,628	..	..	1,494	7·0
6	Ubauro	9,596	..	..	..	..	..	7,985	2,674	1,278	21,533	220	21,377	349	4,967	14,547	685	454	..	3,876	18	880	8·1
7	Mirpur Mathelo.	8,238	..	268	..	41	1	6,238	1,253	2,513	19,552	195	21,247	792	4,090	15,671	735	548	4,268	..	..	1,262	10·5
8	Rohri	14,044	1	155	22	36	1	14,135	4,268	3,900	36,562	3,097	29,659	1,014	5,457	16,856	1,388	1,549	9,878	1	10	2,155	9·7
	Total	82,968	195	879	91	829	22	76,934	28,436	29,593	230,945	10,998	6,634	27,961	109,829	6,778	3,840	34,148	3,887	191	15,796	11·1

SUKKUR STATISTICAL TABLES—II.

Water Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kuchha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Sukkur ..	7	..	..	126	..	..	..	803	803	102	1	2	..	..	1	..	..
2	Garhi Yasin ..	13	..	..	193	..	..	..	1,725	1,725	77	36	..	..	..	1,361	..	..
3	Shikarpur ..	7	..	..	120	..	..	..	1,672	1,672	104	7	..	..	..	749	..	..
4	Pano Akil ..	4	..	..	297	..	..	..	1,910	1,910	45	..	..	..	..	503	..	..
5	Ghotki ..	5	..	..	43	..	..	..	1,907	1,907	101	1	..	..	..	798	..	..
6	Ubauro ..	2	..	..	397	..	..	..	1,114	1,114	56	..	..	..	..	5	..	..
7	Mirpur Mathelo ..	10	..	..	136	..	..	..	1,592	1,592	50	3	..	..	..	625	..	..
8	Rohri ..	5	..	..	376	..	..	..	1,527	1,527	148	11	..	..	..	722	..	..
	Total ..	59	..	..	1,688	..	..	..	12,088	12,088	763	59	2	..	2	4,764	..	..

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Nara Supply Channel (Eastern Nara)	25,000	12,200	12,200	12,200	2,458	10,741	13,199
2	Bunds in Rohri	5,450	4,180	4,180	4,180	749	1,255	1,904
3	Mahi Wah	145,446	99,000	99,000	99,000	49,539	19,493	69,032
4	Canals in Rohri	146,498	82,968	82,968	82,968	43,850	20,089	63,939
5	Rajib	12,400	11,300	11,300	11,300	6,039	5,289	11,328
6	Chiti	18,200	14,500	14,500	14,500	5,004	6,549	11,553
7	Garang	17,900	9,500	9,500	9,500	2,952	3,939	6,891
8	Sind Canal	186,919	111,372	111,372	111,372	62,883	34,584	97,467
9	Carbino	Project executed this Year.						
10	Begari Canal	89,334	50,000	50,000	50,000	44,884	24,609	69,493
11	Sukkur Begari Bund	19,268	13,000	13,000	13,000	3,710	6,809	10,519
12	Sukkur Canal	58,056	49,166	49,166	49,166	19,574	14,122	33,696
13	Ghar Canal	962	550	550	550	112	288	400
14	Ghar Canal Bunds	2,940	1,900	1,900	1,900	336	287	623
	Total ..	Figures not available for the Civil District.	722,352	459,636	459,636	242,070	148,054	390,124

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Average. Total Area.	Area of holding.	Assessment per holding.	Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Sukkur ..	3,446	1,878	376	88	14	5,802	80,401	13·34	41 0 0	2 15 0
2	Garhi Yasin ..	2,174	2,393	736	242	14	5,559	112,146	20·2	51 14 0	2 9 0
3	Shikarpur ..	1,391	1,746	640	279	53	4,110	163,583	39·32	82 0 0	2 1 0
4	Pano Akil ..	4,258	2,641	367	54	11	7,311	77,164	10·2	17 11 0	1 11 0
5	Ghotki ..	4,474	2,856	493	77	8	7,908	81,391	10.22	14 3 0	1 6 0
6	Ubauro ..	2,711	3,030	813	118	5	6,677	93,431	14 0	15 3 0	1 2 0
7	Mirpur Mathelo ..	3,529	2,937	577	117	17	7,227	108,408	15·0	18 8 0	1 4 0
8	Rohri ..	2,788	2,133	494	75	15	5,505	67,212	12·8	22 8 0	1 13 0
	Total ..	24,801	19,616	4,496	1,050	136	50,099	785,736	15·27	29 5 0	1 14 0

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed area. Area.	Assessment.	Incidence per acre.	Fully assessed area, including alienated land in Government Villages. Population.	Incidence per head of population including alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Sukkur ..	80,401	2,37,873	2 15 0	57,379	4 9 0
2	Garhi Yasin ..	112,146	2,88,458	2 9 0	62,534	4 14 0
3	Shikarpur ..	163,583	3,39,149	2 1 0	69,989	5 4 0
4	Pano Akil ..	77,164	1,29,391	1 11 0	41,539	3 12 0
5	Ghotki ..	81,391	1,12,356	1 6 0	41,684	2 14 0
6	Ubauro ..	93,431	1,04,068	1 2 0	36,631	2 14 0
7	Mirpur Mathelo ..	108,408	1,33,955	1 4 0	38,667	3 7 0
8	Rohri ..	76,212	1,23,270	1 13 0	77,310	6 3 0
	Total ..	794,736	14,68,514	1 14 0	425,733	4 11 0

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Culturable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Nara Supply Channel (Eastern Nara)	25,000	23,000	23,000	23,000	1,377	8,767	10,144
2	Bunds in Rohri	450	180	44	44	60	44	104
3	Mahi Wah	145,446	99,000	99,000	99,000	26,071	7,041	33,112
4	Canals in Rohri	146,498	82,968	82,968	82,968	26,455	6,065	32,520
5	Rajib	12,400	11,300	11,300	11,300	3,704	2,535	6,239
6	Chiti	18,200	14,500	14,500	14,500	5,295	3,009	8,304
7	Garang	17,900	9,500	9,500	9,500	2,371	1,359	3,730
8	Sind Canal	186,919	111,372	111,372	111,372	41,654	12,898	54,552
9	Begari Canal	89,334	50,000	50,000	50,000	32,393	8,374	40,767
10	Sukkur Begari Bund	19,268	13,000	13,000	13,000	1,703	1,566	3,269
11	Sukkur Canal ..	58,056	49,166	49,166	49,166	14,429	5,776	20,205
12	Ghar Canal ..	962	550	394	394	59	65	124
13	Ghar Canal Bunds	2,940	1,900	1,900	1,900	257	166	423
14	Kasimpur Bund ..	5,000	4,000	467	88	555		
	Total ..	Figures not available for the Civil District.	722,352	Figures not available for the Civil District.	470,436	154,568	57,463	212,031

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Sukkur	Maximum 1890 ..	..	0·08	..	..	..	..	2·00	7·23	..	..	2·72	0·96	12·99
		Minimum 1898 ..	..	..	..	..	0·03	..	..	..	..	..	..	..	0·03
		Average ..	0·07	0·17	0·27	0·09	0·15	0·04	0·66	0·79	0·32	0·11	0·01	0·04	2·66
		Rainfall for 1922-23 ..	0·02	0·53	..	..	..	..	0·55	..	..	..	..	..	1·10
2	Garhi Yasin	Maximum 1917 ..	0·08	..	0·55	..	0·57	..	..	8·13	10·41	..	..	..	19.74
		Minimum 1920 ..	..	..	..	..	..	..	..	..	..	..	..	..	..
		Average ..	0·06	0·15	0·21	0·18	0·38	0·01	0·39	1·62	1·49	0·20	..	0·01	4·40
		Rainfall for 1922-23 ..	..	0·70	..	..	..	..	..	0·30	0·11	..	..	0·05	1·16
3	Shikarpur	Maximum 1917 ..	00·3	..	0·42	..	0·44	..	..	4·36	8·75	..	..	..	14·00
		Minimum 1922 ..	..	0·00	..	..	..	..	..	..	..	..	..	0·01	0·27
		Average ..	0·23	0·31	0·28	0·14	0·11	0·15	0·64	1·03	0·39	0·03	0·08	0·16	3·55
		Rainfall for 1922-23 ..	..	0·73	..	..	..	..	..	..	..	..	..	0·01	0·74
4	Pano Akil	Maximum 1910 ..	0·07	..	..	0·10	..	3·80	5·50	2·60	..	..	..	0·04	12·07
		Minimum 1904 ..	..	0·00	0·20	..	..	..	..	..	..	..	..	0·00	0·24
		Average ..	0·05	0·12	0·40	0·07	0·33	0·03	0·40	0·56	0·54	0·02	..	0·06	2·66
		Rainfall for 1922-23 ..	0·03	0·52	..	..	..	..	0·17	0·47	0·67	..	..	..	1·86
5	Ghotki	Maximum 1884 ..	0·01	1·03	..	0·11	..	..	1·46	3·60	5·05	..	..	..	11·26
		Minimum 1898 ..	..	0·00	..	..	0·29	..	0·00	..	..	..	..	0·00	0·00
		Average ..	0·17	0·16	0·57	0·10	0·29	..	0·54	0·78	0·60	0·07	..	0·05	2·76
		Rainfall for 1922-23 ..	..	0·30	..	..	0·20	..	0·12	..	0·12	0·05	..	..	0·79
6	Ubauro	Maximum 1884 ..	0·01	1·09	0·18	0·12	..	..	2·93	2·33	5·33	..	..	..	11·99
		Minimum 1901 ..	0·03	0·31	0·45	0·13	0·05	..	0·00	..	..	..	..	..	0·75
		Average ..	0·15	0·24	0·30	0·12	0·28	0·06	1·24	2·18	0·64	..	0·01	0·09	5·31
		Rainfall for 1922-23 ..	..	0·36	..	..	0·83	..	1·00	0·06	0·38	0·05	..	..	2·68
7	Mirpur	Maximum 1884 ..	0·26	1·12	..	0·08	0·16	..	2·19	1·53	8·26	..	..	..	13·34
		Minimum 1920 ..	0·15	0·15	..	..	0·26	..	0·28	..	..	..	..	..	1·25
		Average ..	0·10	0·17	0·49	0·07	0·29	0·16	0·78	1·77	0·53	..	..	0·08	4·35
		Rainfall for 1922-23 ..	..	0·48	..	..	0·37	..	0·65	0·04	0·88	..	..	..	2·42
8	Rohri	Maximum 1878 ..	0·04	0·63	..	0·01	0·02	0·12	5·63	6·37	..	..	..	..	12·82
		Minimum 1895 ..	..	0·13	..	..	..	..	..	..	..	..	..	..	0·13
		Average ..	0·21	0·23	0·21	0·15	0·10	0·11	0·78	0·97	0·12	0·01	0·06	0·12	3·07
		Rainfall for 1922-23 ..	..	0·63	..	..	..	..	..	0·64	0·04	..	..	..	1·31

Temperature Details (Sukkur).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F
1913	Mean maximum ..	77	66	84	106	114	110	103	100	100	92	79	71
	" minimum ..	42	51	55	71	79	82	79	75	77	70	58·7	48
	Absolute maximum ..	82	83	100	109	119	106	102	103	101	101	88	79
	" minimum ..	37	42	49	61	76	84	72	76	78	65	47	40
1914	Mean maximum ..	74	68	82	97	104	104	104	101	101	95	82	74
	" minimum ..	50	50	57	73	83	89	83	85	84	73	65	44
	Absolute maximum ..	83	77	96	104	120	119	110	105	110	98	90	85
	" minimum ..	42	42	52	65	76	83	82	81	80	68	56	37
1915	Mean maximum ..	77	78	92	95	110	111	110	103	104	95	87	77
	" minimum ..	45	47	63	74	86	89	89	83	81	74	56	43
	Absolute maximum ..	84	86	106	110	117	119	115	110	110	102	96	86
	" minimum ..	38	35	50	67	82	84	82	80	78	59	49	33
1916	Mean maximum ..	77	76	100	99	105	110	105	98	100	94	84	76
	" minimum ..	45	47	63	76	74	88	87	86	81	71	50	45
	Absolute maximum ..	82	90	104	106	115	112	112	106	104	96	94	82
	" minimum ..	37	35	54	70	76	82	86	82	76	54	39	33
1917	Mean maximum ..	75	68	89	98	102	108	105	97	96	96	86	78
	" minimum ..	48	52	61	71	83	88	87	83	81	71	49	48
	Absolute maximum ..	80	96	98	105	109	113	110	106	101	104	92	83
	" minimum ..	40	42	52	62	74	84	84	80	74	62	44	35
1918	Mean maximum ..	77	83	88	97	111	110	109	105	101	100	86	76
	" minimum ..	47	50	62	72	86	81	83	82	77	70	54	44
	Absolute maximum ..	82	99	102	116	115	114	109	110	104	97	90	84
	" minimum ..	32	34	46	57	80	79	80	76	72	62	52	38
1919	Mean maximum ..	71	85	95	100	106	106	104	101	103	98	87	76
	" minimum ..	41	50	65	73	84	88	88	85	83	70	54	45
	Absolute maximum ..	80	92	100	108	112	116	108	106	108	105	93	88
	" minimum ..	34	36	52	60	66	84	83	80	74	62	44	38
1920	Mean maximum ..	76	79	92	99	106	108	103	104	106	104	84	86
	" minimum ..	42	50	64	76	83	83	86	81	80	74	54	46
	Absolute maximum ..	82	97	102	112	112	114	112	108	108	112	88	86
	" minimum ..	36	31	50	52	76	84	82	82	74	60	44	33
1921	Mean maximum ..	77	46	103	106	}							
	" minimum ..	43	57	60	72								
	Absolute maximum ..	90	106	112	112	Details not available.							
	" minimum ..	33	36	54	68								
1922	Mean maximum ..	}											
	" minimum ..												
	Absolute maximum ..	Details not available.											
	" minimum ..												

Prices—Pre-war Normal.

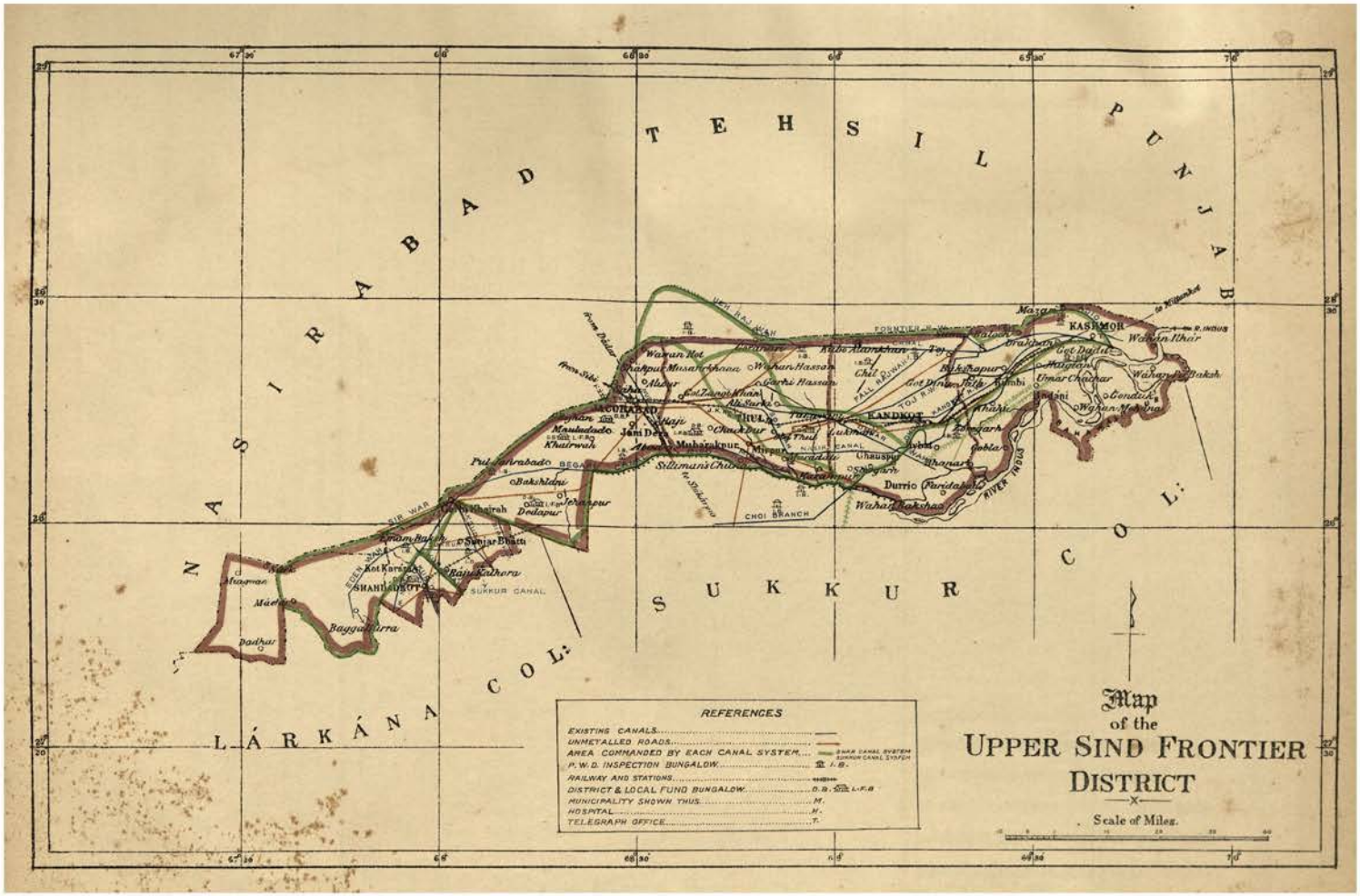
No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Mug.	Gur 1st Kachi.	Gur 2nd Pakki.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
								R. a. p.	R. a. p.	R. a. p.
	Headquarter Towns.									
1	Sukkur ..	25	31	13	31	128	119	1 3 7	0 8 1	0 7 6
	Non-headquarter Towns									
2	Garhi Yasin ..	25	30	17	22	327	..	1 4 0	0 6 10	0 6 5
3	Shikarpur ..	24	31	12	21	209	266	1 3 5	0 9 2	0 6 5
4	Pano Akil ..	28	27	18	22	190	182	1 3 10	0 9 0	0 6 0
5	Ghotki ..	25	35	11	32	128	192	1 3 0	0 8 0	0 5 0
6	Ubauro ..	30	30	11	..	1,318	..	1 6 2	0 8 2	0 6 0
7	Mirpur Mathelo.	26	26	12	23	172	120	1 4 0	0 8 0	0 6 0
8	Rohri ..	24	28	14	23	161	162	1 3 5	0 8 0	0 6 0
	Average of the non-headquarter towns ..	26	28	14	22	378	184	1 3 10	0 7 3	0 5 10

Prices, 1922-23.

No.	Taluka.	Price in lbs. per Rupee. Jowari.	Bajri.	Rice.	Mug.	Gur 1st Kachi.	Gur 2nd Pakki.	Wages per diem per man. Skilled Labour.	Ordinary Labour.	Field Labour.
								Rs. a. p.	Rs. a. p.	Rs. a. p.
	Headquarter Towns.									
1	Sukkur ..	22	20	7	..	220	98	2 8 0	0 13 0	0 10 0
	Non-headquarter Towns									
2	Garhi Yasin ..	21	20	..	..	320	..	2 2 0	0 13 0	0 9 6
3	Shikarpur ..	21	20	..	..	300	..	2 2 7	0 13 0	0 10 0
4	Pano Akil ..	22	20	..	..	225	128	2 2 7	0 13 0	0 10 0
5	Ghotki ..	23	23	..	..	250	112	2 2 0	0 13 0	0 9 6
6	Ubauro ..	24	..	..	..	250	..	2 1 0	0 9 6	0 9 6
7	Mirpur Mathelo.	19	18	..	..	290	..	2 2 7	0 8 0	0 10 0
8	Rohri ..	23	22	..	..	290	..	2 2 8	0 9 0	0 7 9
	Average for the period ..	22	21	7	..	269	120	2 2 3	0 11 3	0 9 0

Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

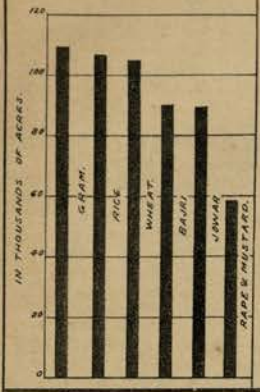
Month.	1911-12. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1918-19. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.	1920-21. Relief Workers.	Dependents.	Gratuitously relieved.	Total Daily Average.	Price in lbs. per Rupee. Jowari.	Bajri.
	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.	No.	No.	No.	No.	Lbs.	Lbs.
							No Famine Relief Works opened.											



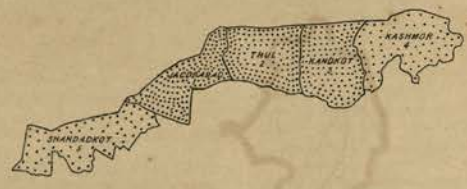
Map
of the
UPPER SIND FRONTIER
DISTRICT
Scale of Miles.
REFERENCES
EXISTING CANALS
UNMETALLED ROADS
AREA COMMANDED BY EACH CANAL SYSTEM
P.W.D. INSPECTION BUNGALOW
RAILWAY AND STATIONS
DISTRICT & LOCAL FUND BUNGALOW
MUNICIPALITY SHOWN THUS
HOSPITAL
TELEGRAPH OFFICE
NASIRABAD TEHSIL
PUNJAB
SUKKUR COL:
LÁRKÁNA COL:
KASHMOR
KANDKOT
SHAHDADKOT
RIVER INDUS
SUKKUR CANAL
CHOI BRANCH

UPPER SIND FRONTIER DISTRICT.

RELATIVE AREA OF PRINCIPAL CROPS.

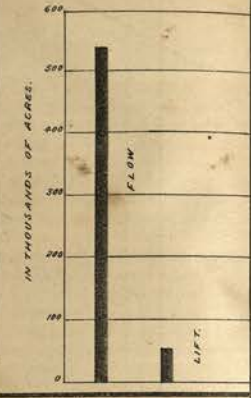


AREA UNDER IRRIGATION.

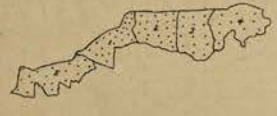


ONE DOT = 1000 ACRES.

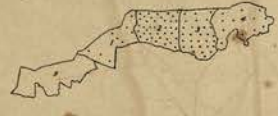
RELATIVE AREA UNDER IRRIGATION FROM DIFFERENT SOURCES.



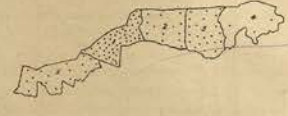
AREA UNDER CROPS.



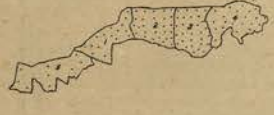
JOWAR. ONE DOT = 1000 ACRES.



BAJRI. ONE DOT = 1000 ACRES.

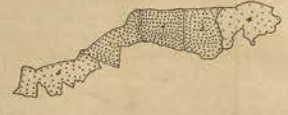


RICE. ONE DOT = 1000 ACRES.



WHEAT. ONE DOT = 1000 ACRES.

GRAM. ONE DOT = 1000 ACRES.



JAMBHO. ONE DOT = 100 ACRES.

NUMBER OF CATTLE.

1909-10

ONE DOT = 1000 CATTLE.

1915-16

ONE DOT = 1000 CATTLE.

1919-20

ONE DOT = 1000 CATTLE.

UPPER SIND FRONTIER

POSITION AND AREA

The Upper Sind Frontier District is situated between 27° 40′ and 28° 30′ north latitude and 67° 22′ and 69° 47′ east longitude and covers an area of 2,695 square miles. It is bounded on the north by the Territories of His Highness the Khan of Kalat, the Nasirabad Tehsil of British Baluchistan, and the Dera Ghazikhan district of the Punjab, on the east by the river Indus, on the south by the Sukkur and Larkana districts and on the west by the Khirthar range of mountains. Its greatest length from east to west is one hundred and fourteen miles and the maximum breadth from north to south twenty miles. The land itself lies from one hundred and seventy to two hundred and seventy-three feet above sea level and slopes from Kashmor westwards.

PHYSICAL FEATURES

The country is quite flat except on its western border, where the Kohistan country extends to the Khirthar range. This is the northern extremity of the great range of lime-stone mountains, once called the Halla and now the Khirthar, which run along the western boundary of the Province of Sind for a distance of one hundred and fifty miles. The highest peak of Khirthar range, within this district, is the Miangun, rising to a height of 5,100 feet. The Kohistan in this district is very bleak and rugged, and is very sparsely inhabited. Flocks of hill sheep and goats, however, find ample subsistence in it. Between the ridges there are flat valleys, which are watered by the rain water from the hills above them and produce intermittent crops chiefly of *jowar*. At the lower levels the hill streams, or *nais*, are dammed in places to form reservoirs, which retain the water long enough to enable cultivation to be undertaken on a fairly extensive scale. The chief of these hill streams is the Khenji Nai, which forms the border between this district and Larkana district. In a year of abundant rainfall the whole country between the hills and the Eden Begari Canal, which is known as the Sir Amani tract, is liable to be flooded.

Geologically, the district consists of alluvial deposits and desert.

The Indus is the only river of the district and flows an ever varying course, along its eastern border for some sixty miles.

The physical aspect of the district has been completely changed by the construction, in 1879-80, of the great protective bund, known as the Kashmor Bund, in order to keep out the river floods. Before this was done, the floods poured over the country unchecked and were known to have reached as far as the present Larkana district. The embankment now keeps out the flood water and cultivation is general.

CLIMATE AND RAINFALL

The climate of the district is remarkable for its intense heat,—the greatest in India, its variations in temperature, and the smallness of the rainfall. The hot season extends from April to October. For the remainder of the year the weather is cold and agreeable. In November and March the temperature rises considerably in the day time, but in the winter nights, the cold is severe and frost is frequent. Cool nights are experienced in April and May, after which the full force of the heat is felt, the nights being oppressive and the humidity generally over seventy per cent. Shade temperatures over 120° F are frequently recorded and sometimes the thermometer does not fall below 90° F for several successive days. After August the nights become cooler, the north-west wind sets in and by the middle of October the temperature falls considerably. The normal annual rainfall amounts to about four inches. During the last forty-five years the maximum rain (15·46 inches) occurred at Shahdadkot in 1917 and the minimum (0·06 inches) at Kashmor in 1880.

SOILS

The general nature of the soil is an alluvial deposit brought down by the Indus. There is a certain amount of sand, and a good deal of alkali land known as *Kalar*. The latter has increased considerably since the Kashmor embankment shut off the river floods. It can, however, be kept down by heavy watering and is now frequently reclaimed in this way, good millet and rice being grown on it. In the high lands, alkali is very common. The torrents from the northern and western hills bring down another kind of alluvial soil, a hard, thirsty, reddish clay, which is fertile if heavily watered.

CROPS

The principal *Kharif* crops are *jowar*, *bajri*, rice and sesame.

Jowar.—*Jowar* with an area of nearly ninety thousand acres is largely grown in all talukas. It is the staple food of the district. Two varieties, white and red, are raised.

Bajri.—*Bajri* with almost an equal area (ninety thousand acres) with *Jowar* is the next important crop. It is chiefly grown in the Thul and Kandhkot talukas.

Rice.—Rice with an area of over one hundred thousand acres is principally grown in the Jacobabad taluka, which alone accounts for nearly fifty per cent. of the area under the crop. It is also grown to an appreciable extent in all the other talukas except Kashmor where its cultivation does not exceed three thousand acres. There are two main varieties, the *sugdasi* and *sathriun*.

Sesame.—Sesame occupies an area of about six to seven thousand acres and is grown in all talukas.

Among *Rabi* crops the chief are wheat, gram, *lang*, *jambho* and rape.

Wheat.—The cultivation of wheat is generally distributed but most is grown in the Thul, Kandhkot and Kashmor talukas. The total area under the crop amounts to slightly above a hundred thousand acres.

Gram.—Out of a total area of about a lakh of acres, nearly one-third is claimed by Jacobabad and Thul talukas each, and about one-fourth by the Kandhkot taluka. The other talukas of Kashmor and Shahdadkot grow to an extent of only five thousand acres each.

Lang.—*Lang*, *lakh* or chickling vetch is mostly raised as a second (or *dubari*) crop in rice fields in the Jacobabad taluka which alone accounts for two-thirds of the total area (thirty to forty thousand acres) under the crop. Elsewhere, the cultivation is small.

Jambho.—*Jambho* or white mustard claims an area of about forty thousand acres and is almost confined to the Jacobabad, Kandhkot and Thul talukas in each of which there are from ten to twelve thousand acres under the crop. The area in Kashmor and Shahdadkot talukas is limited to three to four thousand acres each.

Rape.—The area cropped with rape is large only in Shahdadkot which alone occupies more than fifty per cent. of the total area. Thul and Kandhkot talukas also grow it to an appreciable extent.

The irrigation abstract shows the area irrigated by the different sources of irrigation and under the various crops.

CATTLE

The cattle used for draught, in the district, are generally of fair quality; but the *kachhi* breed, from the Nari river, is especially famous throughout both Sind and Punjab. Out of a total of nearly one hundred and fifty thousand cattle, about forty to fifty thousand are oxen for ploughs, fifty to sixty thousand cows, fifteen thousand buffaloes and the rest young stock. Sheep and goats together number about two lakhs. The sheep are of the *Dumba* or fat-tailed kind yielding excellent mutton. Horses and ponies number about five to six thousand. Much attention is bestowed by the Baloch on the breeding of mares. Camels number about five thousand and are met with in all the talukas.

FORESTS

Forests occupy an area of eighty-three square miles. Of this, two square miles are occupied by Protected Forest. Almost the whole forest area of this district was at one time subjected to the floods of the river Indus and contained good tree growth. Since the construction of the Kashmor Protective Bund, the supply of water has been cut off and much of the tree growth has deteriorated or perished. With the materialisation of the schemes allied with the Sukkur Barrage Project, however, it is hoped that the forests will again get an ample supply of water and recover from their present poor condition.

IRRIGATION

The Upper Sind Frontier District is mainly served by the three canals known as the Desert, the Unhar and the Begari canals, besides by portions of the Ghar and Sukkur canals which have been described in the Larkana district.

The *Desert Canal*, originally existing at the head portion in the shape of Maksudo wah, was brought to the present state in 1903. At present it takes off from a *Dhand* of the river, four miles west of Kashmor. After traversing the northern portion of the Kashmor and Kandhkot talukas it enters the Thul taluka and runs along the Kalat boundary in British territory. The more important branches of the canal are Kandhkot Rajwah, Frontier and Toj Rajwah, Fall and Uch Rajwahs. The canal is eighty-three feet wide at head and its full supply depth at the head regulator is eight feet and the average discharge entering it is three thousand cubic feet per second. The Adio Wah, an independent canal, forms part of this system. About two-thirds of the cultivation on

this system lies in the Upper Sind Frontier district and the rest in the Kalat territory.

Unharwah.—Originally a private water course, this was, after extensions and improvements, brought to the present state in 1887. It takes off from a *Dhand* in Khandkot taluka and runs through it and the Thul taluka in a length of thirty-six miles. The most important branch of this canal, and one equally as big as the main canal itself, is the Nasir Wah.

The canal is sixty-eight feet wide at head and its full supply depth at the Head Regulator is nine feet and a half. The average discharge passing down the canal is 1,750 cubic feet per second.

The Begari Canal originally existing as a small canal was extended to its present limit in 1856. It takes off from the main river about thirty-five miles north of Sukkur, in the Kandhkot taluka and for fifty-three miles forms the boundary between the Sukkur and Upper Sind Frontier districts. It then runs for twenty-three miles through the Jacobabad taluka and bifurcates at Khairogarhi into two branches called the Eden and Sir. The more important branches of this canal are the Mirza Wah and Nur Wah.

The canal is one hundred and thirty feet wide at the head and its full supply depth at the new Head Regulator is twelve feet, the average discharge is 5,700 cubic feet per second. About seventy per cent. of the total cultivation on this system lies in the Upper Sind Frontier district, sixteen per cent. in the Sukkur district and fourteen per cent. in the Kalat Territory.

Kashmor Bund.—The main line of this bund is forty-eight miles in length starting with the new Begari Head Regulator at Choi and ending at the Sind Punjab boundary line, the extreme north-east point of the Kashmor taluka. There are other loops to this main line and their total mileage is forty-two.

In Jacobabad taluka, ninety-seven per cent. of the cultivation is under flow irrigation; in Thul, ninety-three per cent. These talukas are practically independent of hill torrents and depend for their irrigation entirely on canals. Jacobabad is irrigated by the Begari Canal and its branch the Nurwah. Thul is irrigated by the Mirzawah and the Sonwah ex-Begari, the Unharwah and the tail of the Desert Canal. The Kandhkot taluka consists chiefly of a flat plain. The Bugti hills lie some sixteen miles beyond its northern border and torrents from these used to cause flood as far as the Desert Canal. The construction of the Frontier Rajwah has now checked these. The taluka is watered by the Desert, Unhar and Begari Canals and their branches. About ninety-two per cent. of the cultivation is under flow irrigation and the rest under lift. The Kashmor taluka is practically divided in two halves by the Kashmor Bund. The land between it and the river is liable to be inundated annually and excellent *rabi* crops are then produced. Besides this, the taluka is irrigated by the Desert Canal, the Adiowah and some minor canals which pass through the Bund. Previous to the construction of the Adiowah in 1904 torrents from the hills used to cause damage. About ninety-one per cent. of the cultivation is under flow irrigation and the remainder is under lift. The Shahdadkot taluka is divided by Eden Begari Canal. The land to its east is irrigated by this canal and by the tails of the Sukkur Canal, the Shahji Kur, and the Dateji Kur ex-Ghar. The land to the west is known as the Sir Amani tract. It is irrigated by the Edenwah and is exposed to hill floods. Seventy-three per cent. of the cultivation in this taluka is under flow irrigation and twenty-seven per cent. under lift.

The different modes of irrigating or watering are known under the names of *Mok* where the land is lower than the surface of the water by which it is irrigated; *Charkhi* and *Chahi* where the land is watered by a wheel from a canal and well respectively; *bosi* where land is flooded from canals during the annual inundation; and *sailabi* or land over-flooded by the river during the annual inundation.

DRINKING WATER

Except in the town of Jacobabad which depends upon wells which soon become brackish and the water is notoriously bad, and also at Kashmor and Thul where also the well water is somewhat bad, the quality and quantity of drinking water is generally good throughout the district.

TRADE AND INDUSTRIES

The internal trade and commerce of this district is principally in *jowar*, *bajri* and *til*, the greater part of which is sent to the sea-board. The transit trade from Central Asia is also considerable and is conducted by means of the railway and on camels, ponies and asses. The manufacture of salt, which was formerly conducted on a large scale, being now prohibited, local wants are supplied from the Moach works near Karachi. The lacquered wood-work of Kashmor is worthy of mention. Embroidered and plain shoes are made on an extensive scale in many places. Woollen carpets, saddle bags, ropes, grain bags, etc., are woven by Baloch and Jat women. Mats, brooms, sieves, baskets, fans and ropes are similarly made from the leaves of the *pish* (dwarf-palm). Cotton cloth of an inferior description is also woven. Dyeing and calico printing are carried on to a small extent.

COMMUNICATIONS

The North-Western Railway passes through the district at its narrowest point. Besides Jacobabad, there is only one other station, Abad. The Jacobabad-Kashmor Railway—a light 2½ feet gauge line—runs through the Kandhkot division to Kashmor *via* Thul and Kandhkot, a distance of seventy-six miles, and follows the telegraph road as closely as possible. A similar line from Larkana to Shahdadkot *via* Kambar has been opened in 1921, and from Shahdadkot to Dadapur in 1923. Both these are owned by a company but are worked by the North-Western Railway.

The roads of the district are all unmetalled but suitable for the ordinary traffic which passes over them. Their length is 1,187 miles.

The country boats plying on the river also afford a convenient and cheap means of communication in Kashmor and Kandhkot talukas.

RELIGION

The population of the district according to the census of 1921 is 240,619. Of this 216,277 are Musalmans, 24,161 are Hindus and 180 represents persons of various denominations.

LANGUAGES

Sindhi and Balochi dialects are spoken by 156,933 and 58,305 persons respectively. Other prevailing languages are Brahui 14,933, Pashto 885, Siraiki 3,853, Hindi 1,213, Panjabi 862 and Rajasthani 2,028.

OCCUPATIONS

According to broad occupations 177,021 persons or 73·6 per cent. of the population are supported by Agriculture. Industry supports 15,059 persons or 6·2 per cent. Commerce, *i.e.*, trade and transport, affords the means of livelihood of 19,403 persons or 8·1 per cent., while 29,136 persons or 12·1 per cent. follow various other occupations for their maintenance.

ECONOMIC CONDITION

As regards the economic condition of the people, the *zamindars* have, with a few exceptions, prospered. Some of them hold land on a very large scale and of these again some few devote considerable personal attention to their cultivation. They are extremely wealthy and their lands, even to the casual observer, present an appearance of more careful tillage and greater prosperity than is to be found probably anywhere else in Sind. The *jagirdars* of the four Jagirs around Jacobabad, however, are somewhat in a reduced condition as they have neither the desire nor the capital to improve their lands.

The common cultivator lives an easy and indolent life and is often indebted to the village *bania*. This only means that he has no use for money and never carries it, not that he is deprived of sufficient food and clothing. There are practically no agricultural labourers and such labour as there is, is taken up by miscellaneous employment.

Owing to the predominance of the Baluch element in the district the tribal organisation is closer here than elsewhere. This tribal organisation gives the tribal 'Sirdars' and 'Mukadams' greater influence in their tribes even than is enjoyed by the ordinary big Sindhi 'Zamindar' elsewhere in Sind and on the whole, it is to the economic advantage of the various communities,—civil disputes being usually settled quickly and satisfactorily by persons of local influence instead of going to the civil courts.

LIABILITY TO FAMINE AND MIGRATION

There is no industrial town in the district to attract men from other quarters nor is there any portion of the district liable to famine, necessitating the emigration of its inhabitants.

Cultivated and Uncultivated Area, 1922-23.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1921). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallow.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Total.
								No.	No.	Rs.	No.			Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Jacobabad ..	95	443	4	21	99	464	75,077	162	5,20,158	99	296,509	100	127,222	..	82,331	209,553	29,914	4,174	52,868	86,956
2	Thul ..	96	497	..	..	96	497	49,924	100	4,58,757	95	317,879	100	146,088	..	93,092	239,180	37,921	..	40,778	78,699
3	Khandkot ..	88	544	..	..	88	544	53,134	97	4,13,336	88	351,437	100	130,445	..	82,510	212,955	44,380	3,827	90,275	138,482
4	Kashmore ..	62	540	..	..	62	540	36,253	64	1,79,558	62	363,022	100	64,343	..	42,669	107,012	104,088	32,308	119,614	256,010
5	Shahdadkot ..	87	593	1	21	88	614	26,231	42	1,62,369	86	271,481	68	63,147	..	124,634	187,781	51,849	..	31,851	83,700
	Total ..	428	2,622	5	42	433	2,664	240,619	89	17,34,178	431	1,600,328	94	531,245	..	425,236	956,481	268,152	40,309	335,386	643,847

Irrigation Abstract, 1922-23.

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Jacobabad ..	..	..	73	..	127,222	127,149	..	..	52,115	16,075	5	23,539	8,313	22	55,808	5	1,612	..	11,735	169,229
2	Thul ..	..	..	87	..	146,088	146,001	..	..	27,863	9	20,369	39,140	2	42,804	3	1,040	..	118,910	163,221	17,133
3	Khandkot ..	..	..	373	11,938	130,445	118,134	..	..	22,456	29,836	46	14,997	29,245	..	33,547	3	348	113	14,265	144,856
4	Kashmore ..	..	..	415	24,082	64,343	2,807	21,863	49	10,806	12,537	..	12,354	..	1,526	104	4,241	66,287	1,944	64,343	14,411
5	Shahdadkot ..	..	..	6	..	63,147	16,014	9,269	1	29,365	451	..	11,990	1	849	..	14,810	72,750	9,603	63,147	130,445
	Total ..	..	..	954	36,020	531,245	106,663	104,906	110	89,076	89,695	24	156,303	125	3,375	218	63,961	616,343	85,058	531,245	

Cultivated and Uncultivated Area, 1918-19.

No.	Taluka.	Number and area of villages. Government. No.	Government. Area in square miles.	Alienated. No.	Alienated. Area in square miles.	Total. No.	Total. Area in square miles.	Population (1911). Total.	Density per square mile.	Land Revenue.	Area for which agricultural statistics are available. Villages.	Area in acres.	Percentage of previous column.	Area cultivated. Cropped (Net). Irrigated.	Cropped (Net). Not irrigated.	Fallow.	Total.	Area uncultivated. Available for cultivation.	Not available for cultivation. Forest.	Not available for cultivation. Other.	Total.
								No.	No.	Rs.	No.			Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Jacobabad ..	94	437	5	26	99	463	78,540	170	2,48,205	99	292,396	100	84,105	..	121,391	205,496	31,917	5,399	53,584	90,900
2	Thul ..	96	497	..	..	96	497	53,169	107	1,99,478	96	317,912	100	77,906	..	159,402	237,308	39,870	..	40,734	80,604
3	Khandkot ..	88	545	..	..	88	545	52,194	97	1,94,030	88	348,502	100	74,662	..	131,538	206,205	48,588	3,827	89,887	142,302
4	Kashmore ..	62	536	..	..	62	536	43,268	81	98,802	62	343,243	100	38,095	775	58,110	96,980	109,788	16,133	120,342	246,263
5	Shahdadkot ..	84	598	1	21	85	619	35,116	56	62,192	83	271,481	68	34,516	..	153,206	187,774	51,881	..	31,826	83,707
	Total ..	424	2,613	6	47	430	2,660	263,007	99	8,02,707	428	1,577,534	93	309,284	775	623,699	933,758	282,044	25,359	336,373	643,776

Irrigation Abstract, 1918-19.

No.	Taluka.	Area irrigated from. Government Canals.	Private Canals.	Tanks.	Wells.	Other Sources.	Total.	Crops irrigated. Rice.	Wheat.	Barley.	Jowar.	Bajra.	Maize.	Other cereals and pulses.	Sugarcane.	Other food crops.	Cotton.	Other non-food crops.	Total.	Deduct area cropped with irrigation more than once.	Net irrigated area.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Jacobabad ..	..	..	154	..	84,105	83,951	..	..	45,740	6,519	14	19,312	6,115	29	24,117	21	1,005	7	2,266	105,126
2	Thul ..	..	..	601	..	77,906	77,305	..	..	32,850	12,856	1	565	112	4,524	83,355	5,449	77,906			
3	Khandkot ..	..	..	765	7,551	74,662	9,336	20,291	57	11,946	18,991	..	10,833	1	231	287	4,810	76,783	2,121	74,662	
4	Kashmore ..	..	..	351	15,564	38,870	2,736	16,736	53	4,952	5,225	4	7,557	..	261	683	1,720	39,927	1,057	38,870	
5	Shahdadkot ..	..	..	32	..	34,516	12,911	1,507	2	18,605	328	..	2,968	7	700	38	811	37,827	3,361	34,516	
	Total ..	..	..	1,903	23,115	310,059	79,044	57,525	135	66,466	63,509	33	58,332	112	6,762	1,127	14,131	343,068	35,009	310,059	

Crops, 1922-23.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse-grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Urid.	Lang.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices (including Mustard).	Sugarcane.	Oil Seeds. Sesame.	Linseed.	Rape-seed.	Jambho.	Niger-seed.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Jacobabad ..	23,539	8,313	52,115	16,075	178	..	100,220	..	31,787	554	22,726	590	55,657	1,445	117	62	1,624	..	..	..	105	5	1,038	..	708	9,868	..	..	11,614	..	..	8	4	..	169,229	42,007	127,222
2	Thul ..	20,369	39,149	13,271	27,863	94	..	100,746	..	39,714	747	1,485	575	42,521	947	92	36	1,075	16	..	16	57	3	2,295	..	3,662	12,845	..	..	18,802	..	1	..	1	..	163,221	17,133	146,088
3	Khandkot ..	14,997	29,245	22,456	29,836	110	705	97,349	..	27,630	313	4,722	113	32,778	325	6	9	340	7	..	7	14	3	1,348	..	2,010	10,892	..	..	14,250	..	113	2	115	..	144,856	14,411	130,445
4	Kashmore ..	10,806	12,537	2,807	21,863	69	1,504	49,586	..	4,905	171	5,591	163	10,830	98	21	8	127	..	..	..	1,420	..	702	..	429	3,089	..	..	4,220	..	104	..	104	..	66,287	1,944	64,343
5	Shahdadkot ..	19,365	451	16,014	9,269	820	..	45,919	..	4,854	57	6,228	32	11,171	827	36	16	879	..	..	..	6	1	1,113	..	8,196	5,464	..	..	14,773	..	..	..	1	..	72,750	9,603	63,147
	Total ..	89,076	89,695	106,663	104,906	1,271	2,209	393,820	..	108,890	1,842	40,752	1,473	152,957	3,642	272	131	4,045	23	..	23	1,602	12	6,496	..	15,005	42,158	..	..	63,659	..	218	7	225	..	616,343	85,098	531,245

Crops, 1918-19.

No.	Taluka.	Cereals. Jowari.	Bajri.	Rice.	Wheat.	Coarse-grains.	Others.	Total.	Pulses. Tur.	Gram.	Mug and Urid.	Lang.	Others.	Total.	Orchard and Garden Produce. Vegetables.	Green Fodder.	Fruit Trees.	Total.	Drugs and Narcotics. Tobacco.	Others.	Total.	Condiments and Spices.	Sugarcane.	Oil Seeds. Sesame.	Linseed.	Rape and Mustard.	Jambho.	Others.	Total.	Dyes.	Fibres. Cotton.	Others.	Total.	Miscellaneous.	Gross area cropped.	Deduct area cropped twice.	Remainder net area cropped.
		Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.	Acs.
1	Jacobabad ..	19,302	6,115	15,747	6,519	130	..	77,813	..	9,222	278	14,376	154	24,030	818	3	64	885	1	..	1	17	2	323	..	75	1,753	..	..	2,151	..	7	3	10	217	105,126	21,021	84,105
2	Thul ..	11,643	32,850	8,301	12,472	67	..	65,335	..	11,991	172	452	183	12,798	527	20	38	585	13	..	13	21	1	809	..	324	3,218	..	..	4,345	..	112	..	112	145	83,355	5,446	77,906
3	Khandkot ..	11,945	18,991	9,310	20,291	141	331	61,010	..	8,081	118	2,142	77	10,418	220	26	4	250	10	..	10	7	1	657	..	249	3,891	..	..	4,797	..	287	..	287	3	76,783	2,121	74,662
4	Kashmore ..	4,952	5,225	1,775	16,736	69	863	29,620	..	2,187	31	4,256	208	6,682	208	961	5	1,174	2	..	2	48	..	258	..	202	1,237	..	..	1,697	..	683	..	683	21	39,927	1,057	38,870
5	Shahdadkot ..	18,603	328	2,911	1,507	84	..	33,435	..	333	22	2,507	24	2,886	408	270	19	697	..	..	..	13	7	230	..	267	265	..	..	762	..	38	1	39	38	37,877	3,361	34,516
	Total ..	66,450	53,509	78,044	57,525	491	1,194	267,213	..	31,814	621	23,733	646	56,814	2,181	1,280	130	3,591	26	..	26	106	11	2,271	..	1,117	10,364	..	..	13,752	..	1,127	4	1,131	424	343,068	33,909	310,059

Agricultural Stock, 1919-20.

No.	Taluka.	Cattle. For Ploughs. Oxen.	He-buffaloes.	For Breeding. Bulls.	Buffaloes.	For other purposes. Bullocks.	He-buffaloes.	Milch-Cattle. Cows.	She-buffaloes.	Young Stock. Calves.	Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Large, i.e., of over 2 cattle.	Carts. For passengers.	For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Jacobabad ..	10,075	..	820	..	803	..	10,327	4,044	4,811	1,377	32,217	605	23,132	12,369	812	958	5,541	..	..	5,129	33·5
2	Thul ..	5,894	..	..	..	189	..	9,824	2,571	3,758	712	22,948	1,249	24,068	13,571	547	853	4,677	..	6	3,564	65·3
3	Khandkot ..	6,591	20	862	19	237	30	13,920	4,382	4,824	910	31,790	1,861	24,777	23,345	963	761	4,784	..	..	2,637	43·8
4	Kashmor ..	7,726	..	323	15	539	2	9,879	2,499	2,513	433	23,929	280	9,967	12,276	405	1,227	3,753	..	..	1,694	17·1
5	Shahdadkot ..	6,000	..	700	20	21	3	5,579	2,187	2,911	660	18,081	302	19,099	15,956	867	866	2,812	..	..	2,028	24·2
	Total ..	36,286	20	2,705	54	1,784	35	49,529	15,683	18,817	4,052	128,965	4,295	101,043	87,517	3,594	4,665	21,567	..	6	15,052	33·9

Agricultural Stock, 1915-16.

No.	Taluka.	Cattle. For Ploughs. Oxen.	He-buffaloes.	For Breeding. Bulls.	Buffaloes.	For other purposes. Oxen.	He-buffaloes.	Milch-Cattle. Cows.	She-buffaloes.	Young Stock. Calves.	Buffalo-calves.	Total.	Horses and Ponies.	Sheep.	Goats.	Donkeys.	Camels.	Ploughs. Small.	Large, i.e., of over 2 cattle.	Carts. For passengers.	For produce and goods.	Cropped land per pair of plough cattle.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Acs.
1	Jacobabad ..	15,146	..	130	11	..	..	14,319	3,848	9,161	2,107	44,722	2,166	30,617	35,180	1,951	1,153	6,706	24	307	4,907	16·2
2	Thul ..	12,935	1	68	7	42	21	12,105	2,884	8,525	1,597	37,785	1,637	27,655	30,688	960	1,185	5,710	21	8	3,546	26·9
3	Khandkot ..	11,982	5	33	18	9	4	15,305	5,078	7,259	2,029	41,722	2,020	25,336	25,489	1,032	1,222	5,642	3	1	2,107	21·0
4	Kashmor ..	8,985	..	48	15	13	12	13,690	3,464	5,406	1,006	32,699	1,178	13,592	11,914	545	765	4,079	..	56	1,445	12·6
5	Shahdadkot ..	8,968	2	6	4	76	..	7,126	2,107	5,618	1,317	25,224	1,237	15,584	20,630	787	466	2,953	255	235	2,227	14·7
	Total ..	57,616	8	285	55	140	37	62,545	17,381	36,029	8,056	182,152	8,238	112,784	123,901	5,275	4,841	25,060	303	607	14,232	17·4

UPPER SIND FRONTIER STATISTICAL TABLES—II.

Water-Supply, 1922-23.

No.	Taluka.	Government Canals. For Irrigation.	Government Canals. For Drinking.	Government Canals. For Cattle and Washing.	Private Canals. For Irrigation.	Private Canals. For Drinking.	Private Canals. For Cattle and Washing.	Wells in use. For Irrigation. Kutcha.	Wells in use. For Irrigation. Pakka.	Wells in use. For Irrigation. Total.	Wells in use. For Drinking.	Wells in use. For Cattle and Washing.	Tanks. For Irrigation.	Tanks. For Drinking.	Tanks. For Cattle and Washing.	Other Sources. For Irrigation.	Other Sources. For Drinking.	Other Sources. For Cattle and Washing.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	Jacobabad ..	2	..	..	356	..	..	..	117	117	..	..	..	3	2	2	..	..
2	Thul ..	1	..	..	551	..	..	..	405	405	85	..	..	2	55	..	..	..
3	Khandhkot ..	1	..	..	531	..	..	..	571	571	..	..	..	..	2	1	..	..
4	Kashmor ..	2	..	..	352	..	..	..	297	297	141	..	..	..	..	54	..	..
5	Shahdadkot ..	2	..	..	941	..	..	116	116	58	..	..	2	26	..	..	..	..
	Total ..	8	..	..	2,731	..	..	1,506	1,506	401	..	..	7	85	57	..	..	..

Government Protective Irrigation Works, 1922-23.

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1922-23. Kharif.	Rabi.	Total.
		Figures not available for the Civil District.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Desert Canal ..		287,492	130,000	130,000	88,813	94,225	183,038
2	Begari Canal ..		416,887	200,000	200,000	129,457	117,853	247,310
3	Unhar Wah ..		214,056	70,000	70,000	55,702	49,978	105,680
4	Kashmore Bund ..		29,401	4,000	4,000	2,246	2,697	4,943
5	Sind Canal ..		4,119	..	..	..	..	..
6	Ghar Canal ..		53,714	20,185	20,185	11,134	5,994	17,128
7	Sukkur Canal ..		50,618	36,587	36,587	8,754	11,717	20,471
	Total ..		1,056,287	460,772	460,772	296,106	282,464	578,570

Holdings, 1921-22.

No.	Taluka.	Number of Holdings. Under and up to 5 acres.	Over 5 and up to 25 acres.	25 to 100 acres.	100 to 500 acres.	Over 500 acres.	Total Number.	Total Area.	Average. Area of Holding.	Average. Assessment holding.	Average. Assessment per acre.
		No.	No.	No.	No.	No.	No.	Acres.	Acres.	Rs. a. p.	Rs. a. p.
1	Jacobabad ..	283	441	345	234	93	1,396	207,315	148·5	361 8 6	2 7 0
2	Thul ..	152	590	500	370	115	1,727	235,575	136·4	255 3 0	1 13 1
3	Khandhkot ..	214	625	545	378	90	1,852	210,474	113·6	217 7 7	1 14 7
4	Kashmor ..	204	457	334	190	52	1,237	105,924	85·6	141 8 5	1 10 5
5	Shahdadkot ..	400	913	588	305	74	2,280	200,641	87·9	68 12 0	0 12 6
	Total ..	1,253	3,026	2,312	1,477	424	8,492	959,929	113·0	197 13 0	1 12 6

Incidence of Assessment, 1920-21.

No.	Taluka.	Fully assessed Area. Area.	Assessment.	Incidence per acre.	Fully assessed Area including Alienated Land in Government Villages. Population.	Incidence per head of population including alienations.
		Acres.	Rs.	Rs. a. p.	No.	Rs. a. p.
1	Jacobabad ..	123,777	5,09,421	4 1 10	750,077	8 6 5
2	Thul ..	150,936	4,49,983	2 15 8	53,134	6 11 2
3	Khandhkot ..	131,997	4,07,103	3 1 4	36,253	7 3 2
4	Kashmor ..	66,278	1,77,348	2 10 10	26,231	6 12 10
5	Shahdadkot ..	67,365	1,58,133	2 5 7	49,924	11 3 2
	Total ..	540,353	17,01,988	3 3 4	240,619	3 1 7

Government Protective Irrigation Works, 1918-19.

No.	Name of Work.	Gross area commanded.	Cultivable area commanded.	Area irrigable by complete project.	Area irrigable at present.	Area irrigated in 1918-19. Kharif.	Rabi.	Total.
		Figures not available for the Civil District.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1	Desert Canal ..		287,492	130,000	130,000	48,374	43,597	91,971
2	Begari Canal ..		416,887	200,000	200,000	107,370	39,551	146,921
3	Unhar Wah ..		214,056	70,000	70,000	35,721	18,241	53,962
4	Kashmor Bund ..		29,401	4,000	4,000	2,566	1,656	4,222
5	Sind Canal ..		4,119	..	..	103	..	103
6	Ghar Canal ..		53,714	20,185	20,185	8,534	870	9,404
7	Sukkur Canal ..		50,618	36,587	36,587	8,167	3,036	11,203
	Total ..		1,056,287	..	460,772	210,835	106,951	317,786

Rainfall.

No.	Station.	Rainfall.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
			Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1	Jacobabad ..	Maximum 1917 ..	0·03	0·04	0·34	0·01	0·16	..	0·52	4·97	4·79	..	..	..	10·86
		Minimum 1922 ..	..	0·10	0·01	..	..	..	..	..	..	..	..	0·02	0·13
		Average ..	0·28	0·29	0·28	0·19	0·13	0·18	1·01	1·11	0·28	0·04	0·08	0·13	4·00
		Rainfall for 1922-23 ..	0·02	0·82	..	0·18	0·07	..	..	..	..	..	..	0·02	1·11
2	Thul ..	Maximum 1917 ..	0·16	0·05	0·35	..	0·79	..	0·20	3·31	5·89	..	..	..	10·75
		Minimum 1922 ..	0·18	..	0·01	0·03	0·02	0·03	0·15	..	..	..	..	0·02	0·44
		Average ..	0·07	0·12	0·27	0·12	0·15	0·09	0·70	0·83	0·84	0·30	0·04	0·08	3·61
		Rainfall for 1922-23 ..	..	0·50	..	..	0·02	..	..	0·66	0·01	0·23	..	0·05	1·47
3	Khandhkot ..	Maximum 1917 ..	..	0·30	0·15	0·04	1·33	..	0·29	3·97	2·92	..	..	..	8·00
		Minimum 1911 ..	0·13	..	0·49	0·02	..	..	..	..	..	..	0·05	..	0·69
		Average ..	0·13	0·18	0·23	0·15	0·07	0·21	0·60	0·78	0·43	0·65	..	0·10	3·53
		Rainfall for 1922-23 ..	..	0·54	..	..	0·10	..	..	..	0·44	0·35	..	0·03	1·46
4	Kashmor ..	Maximum 1917 ..	..	0·05	0·45	0·41	0·72	..	1·21	6·30	4·94	..	..	..	14·08
		Minimum 1880 ..	..	0·03	..	..	..	..	0·03	..	..	..	..	..	0·06
		Average ..	0·05	0·11	0·32	0·19	0·36	0·20	1·44	1·21	0·71	0·25	..	0·09	4·93
		Rainfall for 1922-23 ..	0·02	0·30	..	0·07	0·40	..	0·45	..	0·21	0·10	..	0·04	1·59
5	Shahdadkot ..	Maximum 1917 ..	0·05	..	0·63	..	0·76	..	..	7·74	6·22	..	..	0·06	15·46
		Minimum 1899 ..	..	0·16	0·36	..	0·08	..	..	..	..	..	..	..	0·60
		Average ..	0·04	0·28	0·42	0·19	0·15	0·17	0·81	2·22	1·41	0·19	0·04	0·10	6·02
		Rainfall for 1922-23 ..	..	0·95	..	0·02	0·27	..	..	..	..	0·04	..	0·35	1·63

Temperature Details (Jacobabad).

Year.	Temperature.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
		°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
1913	Mean maximum ..	77	76	86	106	114	112	107	103	104	99	86	72
	,, minimum ..	45	49	55	74	80	89	85	80	76	67	55	47
	Absolute maximum ..	84	82	101	112	124	123	115	108	109	106	97	79
	,, minimum ..	36	42	42	64	68	72	75	75	63	59	43	35
1914	Mean maximum ..	75	73	88	102	115	112	106	105	103	96	84	74
	,, minimum ..	47	48	59	70	81	86	85	82	80	69	61	48
	Absolute maximum ..	85	83	101	118	126	122	114	111	113	106	92	84
	,, minimum ..	40	38	47	56	67	70	78	77	69	61	52	36
1915	Mean maximum ..	75	78	93	100	117	116	113	107	107	100	88	76
	,, minimum ..	44	48	64	70	82	87	86	83	79	65	52	43
	Absolute maximum ..	83	88	106	116	123	124	125	114	112	108	99	81
	,, minimum ..	37	35	50	54	76	81	81	79	74	56	44	35
1916	Mean maximum ..	75	77	96	101	110	113	109	103	103	98	85	76
	,, minimum ..	46	46	62	72	77	86	85	84	78	66	47	42
	Absolute maximum ..	83	88	105	106	120	120	115	113	110	106	94	81
	,, minimum ..	38	30	52	65	62	83	83	76	70	50	38	36
1917	Mean maximum ..	74	85	88	99	105	115	109	97	95	95	84	73
	,, minimum ..	47	51	57	69	78	87	85	82	80	63	48	43
	Absolute maximum ..	78	93	97	108	113	122	118	105	105	99	91	80
	,, minimum ..	40	42	48	58	67	83	76	76	73	51	41	36
1918	Mean maximum ..	73	81	86	97	116	112	111	107	103	100	88	73
	,, minimum ..	41	51	60	68	80	83	83	81	75	64	52	44
	Absolute maximum ..	79	91	96	114	123	118	119	117	109	104	96	81
	,, minimum ..	31	35	43	52	75	81	79	78	68	56	46	37
1919	Mean maximum ..	72	81	92	100	111	117	109	105	104	100	87	73
	,, minimum ..	42	50	62	71	82	85	85	84	76	62	49	44
	Absolute maximum ..	77	91	96	111	120	127	122	110	109	107	95	83
	,, minimum ..	34	32	53	63	76	81	78	81	66	51	42	39
1920	Mean maximum ..	73	79	92	101	106	113	109	104	103	98	85	71
	,, minimum ..	44	50	62	68	78	84	86	81	77	65	54	42
	Absolute maximum ..	78	90	105	112	115	121	115	109	108	105	95	78
	,, minimum ..	39	32	51	56	64	72	77	77	72	57	44	35
1921	Mean maximum ..	71	78	95	103	110	111	105	98	99	93	83	67
	,, minimum ..	43	47	62	71	80	84	86	82	80	67	55	50
	Absolute maximum ..	72	93	104	108	117	126	113	105	104	100	91	80
	,, minimum ..	34	38	51	58	69	75	81	78	69	55	50	43
1922	Mean maximum ..	65	73	92	104	110	109	106	101	98	93	83	70
	,, minimum ..	46	49	61	73	77	85	87	81	75	66	51	47
	Absolute maximum ..	70	79	101	112	120	120	112	105	104	99	92	78
	,, minimum ..	38	41	46	63	65	77	80	78	70	57	46	38

Prices—Pre-war Normal.

No.	Taluka.	Price in lbs. per rupee. Jowari.	Bajri.	Rice.	Gram.	Wages per diem per man. Jowari & Bajri Grain.	Skilled Labour.	Ordinary Labour.	Field Labour.
							Rs. a. p.	Rs. a. p.	Rs. a. p.
	Head-quarter towns.								
1	Jacobabad ..	27	30	14	27	155	72	1 7 8	0 7 3	0 5 11
	Non-headquarter towns.								
2	Thul ..	26	30	13	27	144	186	1 3 5	0 7 0	0 7 2
3	Kandhkot ..	28	29	15	..	176	22	1 1 0	0 5 5	0 6 7
4	Kashmore ..	27	28	13	25	..	108	1 0 0	0 4 10	0 4 10
5	Shahdadkot ..	27	35	14	23	211	213	1 4 2	0 6 10	0 7 7
	Average of the non-head quarter towns.	27	30	19	25	133	132	1 2 2	0 6 0	0 6 6

Prices, 1922-23.

No.	Taluka.	Price in lbs. per rupee. Jowari.	Bajri.	Rice.	Gram.	Wages per diem per man. Jowari & Bajri Grain.	Skilled Labour.	Ordinary Labour.	Field Labour.
							Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Jacobabad ..	23	22	7	19	173	..	3 0 0	1 0 0	0 3 0
2	Thul ..	20	21	9	16	150	24	2 4 0	0 10 0	0 12 0
3	Kandhkot ..	23	27	8	..	300	24	2 0 0	0 10 0	0 10 0
4	Kashmore ..	22	22	10	20	..	..	2 8 0	0 9 0	0 9 0
5	Shahdadkot ..	21	..	14	26	80	..	2 4 0	0 11 6	0 10 0
	Average of the non-head quarter towns.	27	22	10	21	177	24	2 4 0	0 10 2	0 10 3

Famine Relief—Average Daily Number, 1911-12, 1918-19 and 1920-21.

Month.	1911-12. Relief workers.	Dependents.	Gratuitously relieved.	Total daily average.	Price in lbs. per rupee. Jowari.	Bajri.	1918-19. Relief workers.	Dependents.	Gratuitously relieved.	Total daily average.	Price in lbs. per rupee. Jowari.	Bajri.	1920-21. Relief workers.	Dependents.	Gratuitously relieved.	Total daily average.	Price in lbs. per rupee. Jowari.	Bajri.
							No Famine Relief works were opened.											

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